

# MARINE REVIEW

MAR 7 1925

Registered U. S. Patent Office

THE BUSINESS OF TRANSPORTATION BY WATER

NEW YORK CLEVELAND LONDON

Published Monthly  
Vol. 55, No. 3

MARCH, 1925

\$3.00 a Year  
35c a Copy

## American Marine Exposition

November 9 to 14, 1925

—□—

### Sales Opportunity of the Year

—□—

Your Competitors' Products Will Be Exhibited.  
Are Your Own Sales So Good That You  
Can Afford to Be Left Out?

—□—

To: The American Marine Industry.  
From: The American Marine Association, Inc.  
Subject: How to Increase Your Business.

You have, or can get from us, a prospectus of the 1925 Marine Exposition to be held at the 212th Anti-Aircraft Armory, 61st Street and Columbus Avenue, New York City, during the week of November 9-14, 1925, in conjunction with the annual convention of the Naval Architects and Marine Engineers.

Space available to exhibitors is less than that of the previous marine show. The cost is 30 per cent less, due to lower rent and elimination of commissions to outside salesmen.

The Association is co-operative. All Committees are volunteering their services. Do your part now by reserving your space for the coming show. One-half of the space has been sold before this advertisement, our first, appears.

### ACT PROMPTLY TO GET DESIRABLE SPACE!

In writing specify first, second and third choice.

The American Marine Association, Inc.  
15 Park Row, New York City

E. A. SIMMONS  
PRESIDENT

C. A. McALLISTER  
VICE-PRESIDENT

JAMES PLUMMER  
TREASURER

C. M. DICKINSON  
SECRETARY

#### CHAIRMAN OF COMMITTEES

P. A. SENSENIG  
EXHIBITS

JOSEPH FULLER  
SALES

D. H. PRIMROSE  
PUBLICITY

DAVID KENNEDY  
ADVERTISING

W. Z. GARDNER  
ENTERTAINMENT

EDWARD A. COLSON  
ARRANGEMENTS

## Your Guide To This Issue

### The Marine Show

FOR the American merchant marine the tide is flooding. Day by day more and more American flag ships are going into service on the coasts, the lakes and the high seas. This means business for all and sundry connected with maritime affairs, especially builders of ships and ships' equipment. This year, too, there is going to be a marine show in New York in November. It will be something that everyone connected with ships and shipping will want to attend. The 1925 show will mirror the progress of two years. It will prove that the American merchant marine is *alive*. Plan to attend. If you have something to sell to marine men, exhibit it.

See Page 92

### Henry Ford's Ships

FROM the days of Antonio, the Merchant of Venice, until this hour, goods have been packed for carriage by sea in a certain traditional way and stowed in the ship according to ideas developed by Noah or his predecessors.

It remained for Henry Ford, the iconoclastic wizard of the twentieth century to shatter these ancient stevedoring traditions—some of them at least—and show that new ways of loading miscellaneous cargo are not only possible but profitable. Ford loads parts of machines, including engines, in ocean-going ships uncased. For handling bolts, nuts, etc., he uses large open pans set on top of the rest of the cargo. He works his ships at the dock 24 hours a day instead of eight.

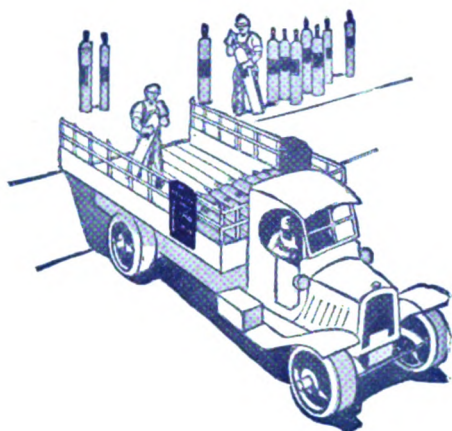
Recently he cleared the first vessel in history from Detroit for Buenos Aires. He runs his freight ships according to schedule and makes money with them.

Ford methods at sea are as unconventional as on land, and as successful. In this issue MARINE REVIEW presents the exclusive story of Henry Ford's steamship operations. It contains a message for every shipowner and operator.

See Page 73



# What do YOU get when you ask for Linde Process Service?



**LINDE PROCESS SERVICE** is built to suit the needs of every Linde user. It is planned to help the smaller shop successfully weld a crank case, or to aid large companies in planning and laying hundreds of miles of welded pipe. It comprises the following divisions:

## 1. Books

Whenever the Linde Company in its field work finds a considerable group of its users struggling to solve the same welding or cutting problem, it plans to publish a book on the subject. These books enable you to help yourself and make it possible for every Linde man to give assistance.

## 2. Magazines

Two monthly magazines are published by the Linde Company. Both have the same aim: to keep Linde customers informed on the latest methods and to let them know how others are using the oxy-acetylene process to save time and money. "Oxy-Acetylene Tips" is edited for large users and "The Linde Oxwelder" is written to help smaller shops.

## 3. Service Operators

Perhaps you cannot find the help you need in the Linde books and magazines. A trained service operator may be needed to help locate the cause of trouble or demonstrate the proper methods. Service Operators are a part of Linde Process Service.

## 4. Service Supervisors

Your problem may be unique or very stubborn, demanding more experience

or knowledge than the service operator can offer. Linde has men with these qualifications who are ready to serve you. They are called Service Supervisors.

## 5. Service Engineers

The solution of some problems requires more than a wide knowledge of process applications and an ability to use the blowpipe, because they involve some special engineering. That is why a group of Service Engineers are on the Linde staff, backing up the service men.

## 6. Consulting Engineers

Occasionally the economical and efficient use of the oxy-acetylene process requires that it be coordinated with other processes. This may require the highest type of engineering talent. When you need this kind of service the Linde Consulting Engineers are available.

## 7. Research Laboratories

Welding and cutting are primarily metallurgical problems. And that means that new methods and new processes must be tested by laboratory methods and be backed with engineering data. In this the Linde Company and you are served by the Union Carbide & Carbon Research Laboratories, Inc.

Every Linde customer can use some part of this service regularly. Some problems may require the whole. Linde Process Service is flexible, and it is planned to fit your needs exactly. You don't want to waste time with the wrong service, so simply state your problem to any Linde man and the right service to fit the case will follow. Linde Process Service is free to every Linde user for the asking.

### District Sales Offices

ATLANTA  
BALTIMORE  
BIRMINGHAM  
BOSTON  
BUFFALO  
CHICAGO  
CLEVELAND  
DALLAS  
DETROIT  
KANSAS CITY  
LOS ANGELES  
MILWAUKEE  
NEW ORLEANS  
NEW YORK  
PHILADELPHIA  
PITTSBURGH  
ST. LOUIS  
SALT LAKE CITY  
SAN FRANCISCO  
SEATTLE  
TULSA

### THE LINDE AIR PRODUCTS COMPANY

General Offices: Carbide & Carbon Building  
30 East 42d Street, New York

37 PLANTS — 80 WAREHOUSES

# LINDE OXYGEN

YOU CAN DEPEND ON THE LINDE COMPANY

Please mention MARINE REVIEW when writing to Advertisers





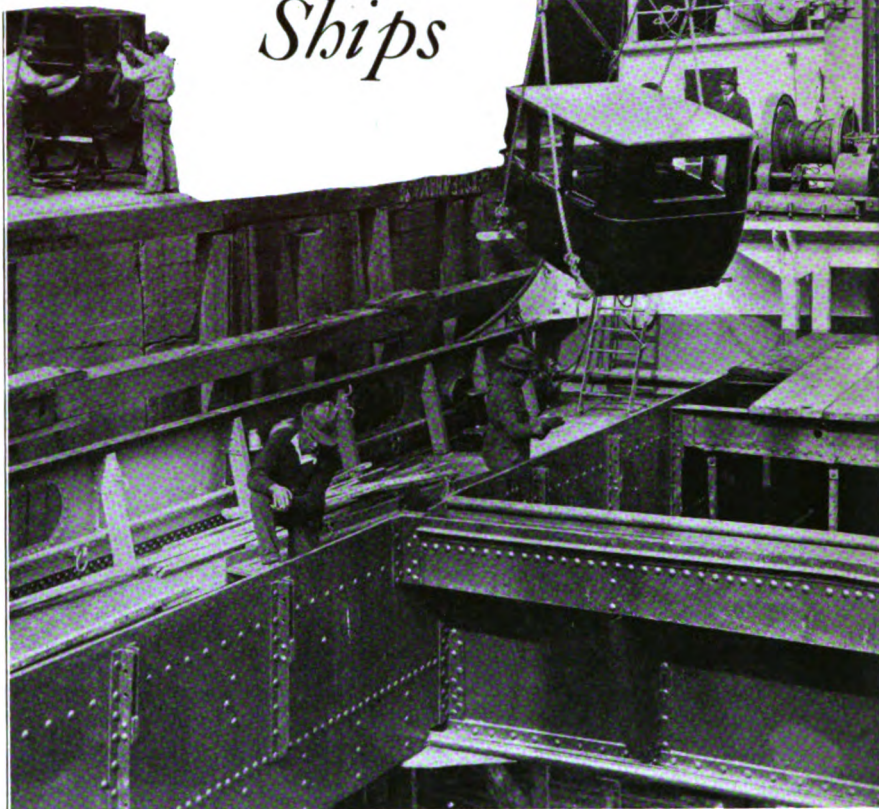
# How Henry Ford

## *LOADS*

### *Ships*

## and Operates *Lake to Ocean and Coastwise Services*

By A. H. Jansson



SS Oneida: A close up showing how finished and uncrated bodies are loaded, thus shattering ancient stevedoring traditions—The cross planks remain for unloading

**A** VOYAGE from the River Rouge to the River Plate has a strange sound to the deep sea sailor.

All such men have heard of the River Plate but if any of them know where the River Rouge lies it would be solely because of the reflected glory that has come to this narrow connecting link between lake St. Clair and Lake Erie, as the home of a famous motor-car plant and not as a port of departure for far off South America. An unheard of proposition, with the River Rouge in the state of Michigan, 900 miles in a straight line from the Atlantic seaboard!

However the facts are that the S. S. ONONDAGA a staunch, steel steamship of 2300 gross tons hailing Detroit as her home port, sailed from the River Rouge on Nov. 5, 1924 bound for Buenos Aires with 1447 tons of automobile parts and, after stopping at Montreal for an additional 460 tons of cargo and a short call at Rio de Janeiro, arrived at Buenos Aires about noon Dec. 15, at the end of her voyage of 7121 miles, delivering her cargo of 100 tractors and parts for 2100 cars in excel-

lent condition. So unusual was it for a ship to clear foreign out of Detroit, that when the captain went to attend to the formalities the port authorities were, not unnaturally, somewhat at a loss and the necessary forms and instructions had to be secured from Washington. The S. S. ONONDAGA thus holds the distinction of being the first vessel ever cleared from Detroit for South America.

In building up his great business Henry Ford has repeatedly supplanted hitherto customary costly processes of converting raw materials into the finished product with original methods of his own based on the ideal of ultimate economy at every step. He has done this, not by attempting to secure labor cheaply or cheap equipment, because he realized that this would not bring the results desired, but by increasing production by orderly studied processes, by standardization, by providing labor the incentive to speed up and carry on and by the use of the most efficient tools in existence and the development of such tools when they did not exist regardless of the



## From Detroit, Michigan

SS Onondaga loading Ford parts and tractors at River Rouge plant for shipment direct to South America via St. Lawrence river—A successful voyage



expense entailed. Such it seems are the lines this company has followed to become the leading industrial concern in the world in mass production at minimum cost.

Having solved the problem of successful production within the plant it was realized that still further economies could be effected by ownership and control of the sources of the raw material such as ore, coal, and lumber. From this followed naturally the control of means of transportation. Coal mines, ore mines, forest lands and an important link in rail transportation, were acquired. All of them have been placed on an economically sound footing, and a further reduction in overall costs have resulted.

### *Goes Into the Steamship Business*

Then it was decided that the ownership and operation of water transportation facilities on the Great Lakes would still further reduce cost and two lake bulk freighters were ordered. Not content with following the lead of established steamship concerns on the lakes in using the usual reciprocating engine and coal fired scotch boilers, Ford with commendable courage and initiative decided that his two new vessels should incorporate the latest developments of marine engineering and in spite of the

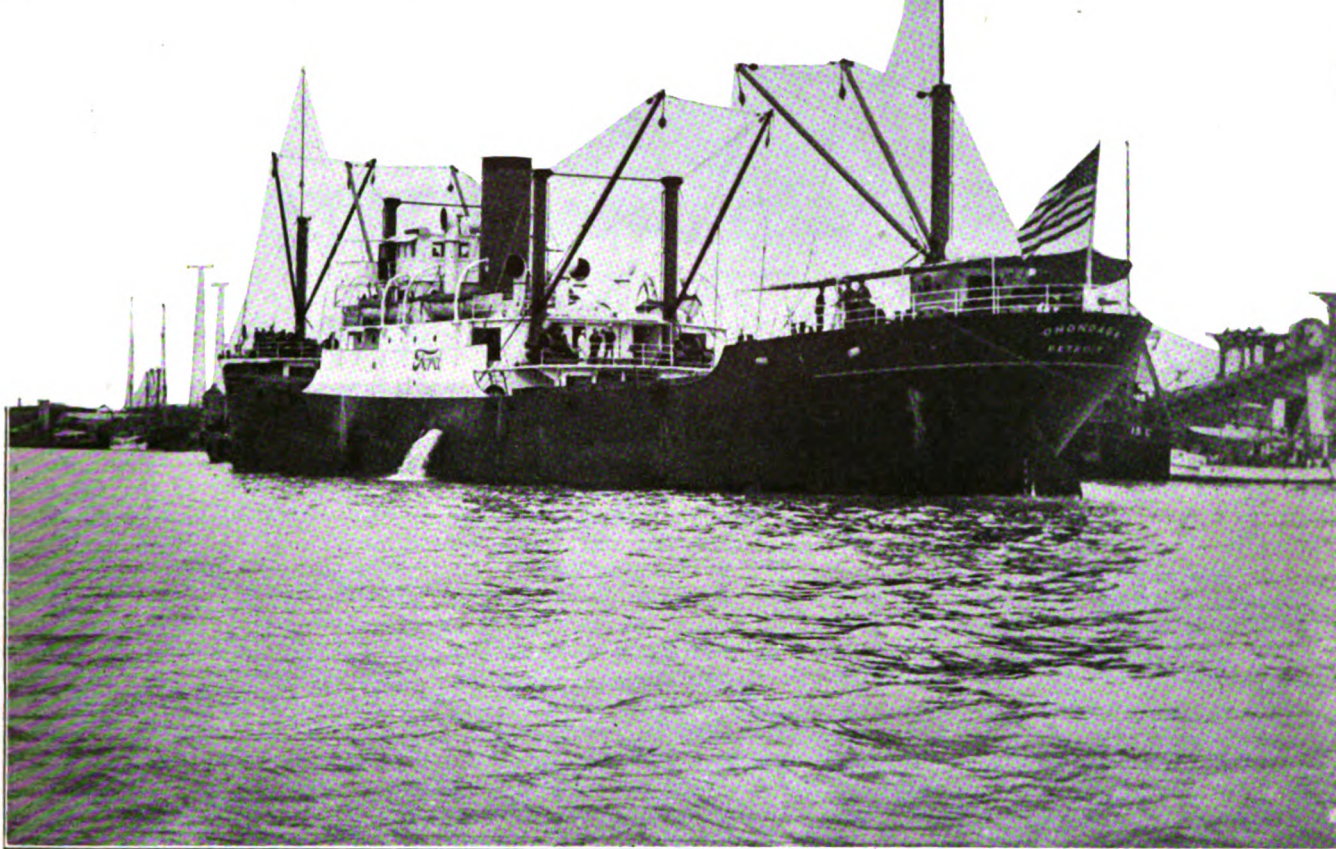
fact that these vessels were to carry coal from the company's own mines, internal combustion engines were decided upon for the motive power. In every other respect also the latest and the best equipment throughout was used. These vessels went into service as soon as completed in July of last year and carried ore from the company's mine in northern Michigan to the blast furnace at the River Rouge plant with return cargoes of coal from the company's mines loaded at Toledo. Both vessels on the last voyage of the season brought full cargoes of lumber from the company's lumber mills in Northern Michigan to the Rouge plant each affording storage for the lumber until it is unloaded as needed.

The next chapter in the development of the Ford company's own transportation by water brings us to the beginning of this article. Economical distribution of the finished product, finding a market, sales methods and transportation, are now problems of major importance to American industry. In economical mass production the United States unquestionably leads the world. It is high time now, if markets are to be found for this superb production, that the same skill, ingenuity and application be directed toward the problems of distribution so that the finished articles of continued and expanding



## To Buenos Aires, Argentine

SS Onondaga arriving in the harbor of Buenos Aires at the completion of her long voyage direct from Detroit with her uniquely loaded cargo intact and in good condition



production may be readily absorbed. In its marketing and sales methods the Ford company holds an enviable position. The entire civilized world knows the product and self supporting sales agencies of excellent character distribute locally in every city, township, and hamlet all over the land and almost as universally abroad.

### *Gains Control of Shipping Methods*

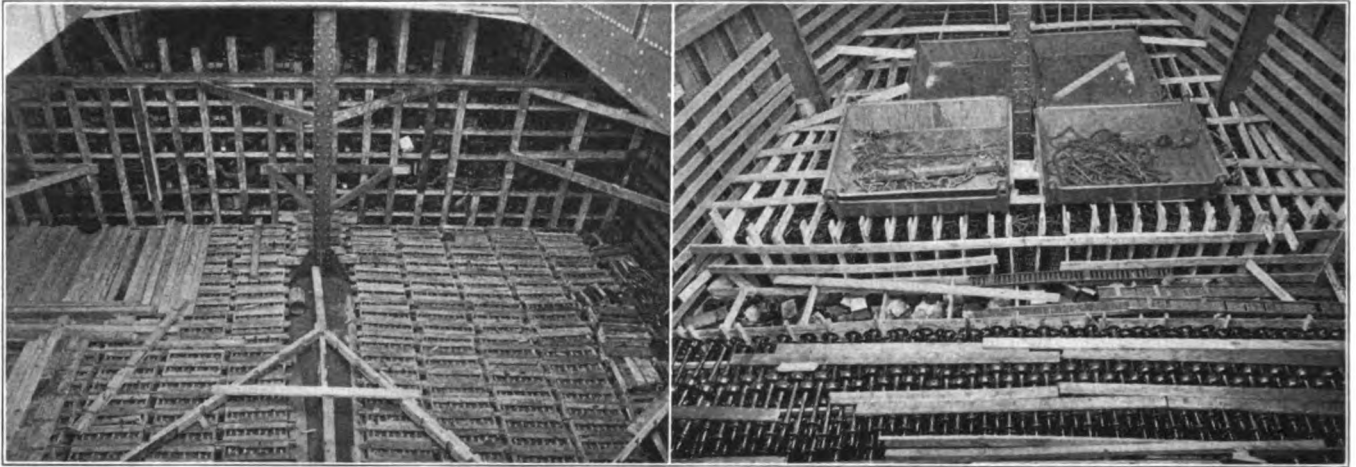
Thus only in transportation has the Ford company been forced to relinquish in part at least its control of the cost and manner of distribution. Of course, both by rail and water, the cost is fixed from time to time and there can be no discrimination. In methods of loading cars for rail shipment the company has been given practically a free hand and most excellent service because of the large business done and the exercise of other legitimate influence. Shipment by water to many parts of the United States however is cheaper and quicker and is of course the only means of transportation to foreign countries outside of this continent. The rates, due to the over supply of shipping in the last few years have been very low, probably lower than is economically justified. But this cannot be said of loading and unloading methods and costs over which the ordinary shipper exercises slight

control. Naturally a steamship taking a part cargo insists on packing and crating according to custom.

As a beginning, and to place a certain portion at least of its transportation by water to ports on the Atlantic and Gulf within its own control the Ford Motor Co. decided to buy two ocean going vessels of a size to permit passage of the Welland canal and so to the plant at River Rouge. For this purpose two vessels somewhat of the type known as lakers, built in great numbers by the shipping board during the war, were bought from the American Ship Building Co., Cleveland. They were built in 1919-1920 for the builders own account and had not seen any service to amount to anything. Illustrations and particulars of these vessels, the S. S. ONONDAGA and S. S. ONEIDA are given with similar data for the two motorships, HENRY FORD II and BENSON FORD, on one of the pages of this article, these four vessels comprising the entire fleet of the company to date. There is nothing particularly striking about the ONEIDA and ONONDAGA, they are merely good small ocean freighters. Originally coal burners they were converted for fuel oil after purchase.

Having acquired two vessels of a size to permit passage from the lakes to tidewater, the Ford company at





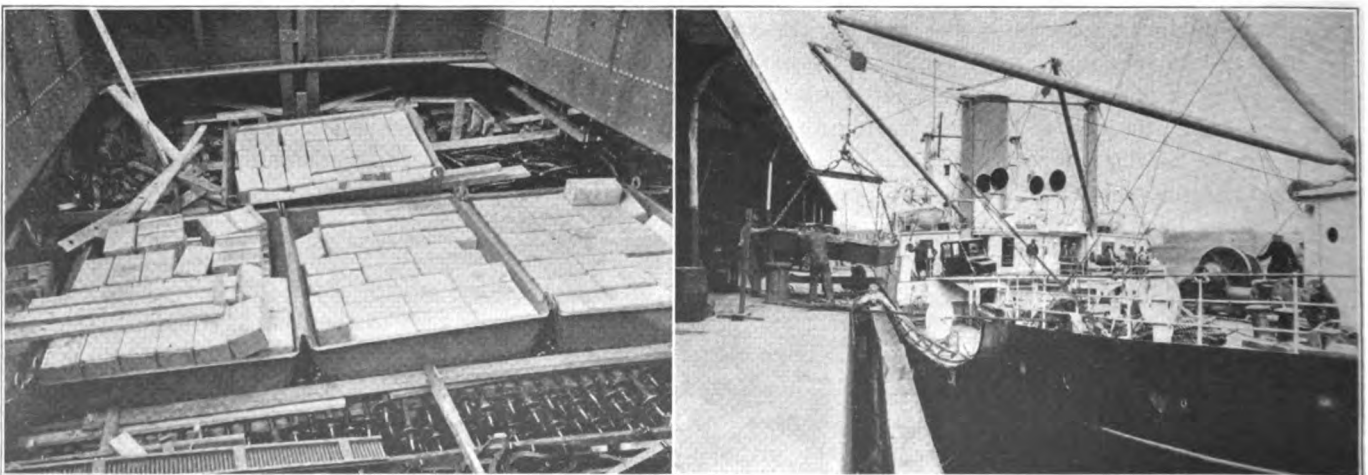
(LEFT)—A VIEW OF NO. 4 HATCH ON VESSEL'S ARRIVAL AT NORFOLK AFTER A STORMY PASSAGE THROUGH THE ST. LAWRENCE AND DOWN THE COAST—NO SHIFTING OR DISARRANGEMENT OF CARGO WAS EXPERIENCED.  
(RIGHT)—NO. 1 HATCH AT NORFOLK, SHOWING STOWAGE IS COMPACT AND IN GOOD ORDER

once began to put some original ideas into the business of loading and operating ships. In the first place it was decided that the ONONDAGA should load a through cargo at the Rouge plant for Buenos Aires, to a draft of 14 feet, the limit imposed by the present waterway from the lakes through the St. Lawrence to the Atlantic. Additional cargo was placed on board at Montreal. The ONEIDA also loaded at the Rouge plant and completed loading at Norfolk for Gulf ports. Old regular line steamship men were very much surprised at this bold move and were sceptical of the success of the venture. The sailing of the ONONDAGA marked the realization of a fixed program. It was a business gesture in the grand manner put through with determination and vision. By this striking move attention has been again directed with new emphasis to the possibilities of commerce and trade direct by water between all parts of the world and the busy industrial region bordering on the Great Lakes or within easy access of lake ports. The local interests of tidewater ports on the

St. Lawrence and the Atlantic cannot stop the march of progress when it is headed in the right direction economically. A distinct service has been rendered by Henry Ford in actually carrying out a full sized complete practical experiment with the largest ship that could get through the St. Lawrence canals. Important actual figures on the cost of shipping products from the Great Lakes to Atlantic and Gulf ports and to South America were thus definitely established, and by direct comparison how greatly these figures could be reduced if the present limitations in length, beam, and draft did not exist. Such a practical demonstration is bound to have a much greater effect in obtaining favorable legislation for the improvement of this waterway than any kind of vociferous propaganda. There it is for both the governments of Canada and of the United States to see—definite cargoes, the products of an industry of Detroit, moved by water without transshipment, to Atlantic and Gulf ports and to South America. A great volume of waterborne

cargoes out of and into the lakes could be built up if the connecting links were lengthened, broadened and deepened so that ships could take cargoes five and six times as great as the one in the ONONDAGA when she sailed for Buenos Aires.

The original manner, disregarding precedent and well meant advice, with which the general plans laid down by the company are carried out by those responsible is nowhere more clearly shown than in the accompanying illustrations of the revolutionary methods developed by Ford in loading and stowing cargoes of manufactured goods. This is the way it was worked out. Instead of organizing a steamship company and employing an experienced shore personnel the manager of the Rouge plant was given charge of and made responsible for the successful operation of the ships. He in turn delegated one of his plant men to carry on the details. The existing traffic department of the company routes the cargo and keeps the records. It is perfectly



(LEFT)—NO. 1 HATCH FINISHED LOADING AT NORFOLK, SHOWING THE LARGE LOADING PANS ON TOP. (RIGHT)—AT NEW ORLEANS, TAKING ON FINISHED BODIES FOR HOUSTON IN NO. 3 HATCH, WHILE UNLOADING PARTS FROM NO. 4 HATCH FOR THE NEW ORLEANS PLANT



# Ford Motor Co. Fleet March 1925



MOTORSHIP HENRY FORD II



MOTORSHIP BENSON FORD

## M. S. Henry Ford II

Builder—American Shipbuilding Co.  
Launched—March 1, 1924  
Completed—July, 1924  
Entered service—Aug., 1924

### Particulars for Henry Ford II and Benson Ford

#### HULL

|                        |        |
|------------------------|--------|
| L. O. A., ft. in.      | 612 0  |
| L. B. P., ft. in.      | 586 0  |
| Beam, ft. in.          | 62 0   |
| Draft, loaded ft. in.  | 20 0   |
| Net tonnage            | 6393   |
| Gross tonnage          | 8,626  |
| Deadweight tons        | 12,000 |
| Speed in statute miles | 13     |

#### ENGINE

|                           |       |
|---------------------------|-------|
| Sun Doxford Diesel        |       |
| Two cycle, opposed piston |       |
| B. H. P.                  | 3,000 |
| R. P. M.                  | 85    |

#### AUXILIARIES

All electric drive.  
These vessels are of standard lake bulk steamer design and are in service during the season carrying ore from Ford mines in northern Michigan to the Rouge plant with return cargoes of coal from Ford mines loaded at Toledo to Duluth.

## S. S. Oneida

Builder—American Shipbuilding Co.  
Bought by Ford Motor Co. June, 1924  
Converted coal to oil burner  
Entered service—July, 1924

## Another Boat

Consistent with the policies outlined in the accompanying article, the Ford Motor Co. is expanding its ownership of marine transportation facilities. Late in February the Ford fleet was augmented by the purchase of the steamer EAST INDIAN from the Emergency Fleet Corp. This vessel, which is understood to have a deadweight capacity of 12,500 tons, was built in 1916. She will be reconditioned at Chester, Pa., where she is now moored. In connection with this purchase Edsel Ford is understood to have said: "We have decided to enlarge our fleet to include ocean-going vessels, which will enable us to ship to our European plants."

## M. S. Benson Ford

Builder—Great Lakes Engineering Works  
Launched—April 26, 1924  
Completed—July, 1924  
Entered service—Aug., 1924

### Particulars for Oneida and Onondaga

#### HULL

|                       |        |
|-----------------------|--------|
| L. O. A., ft. in.     | 261 0  |
| L. B. P., ft. in.     | 251 0  |
| Beam, ft. in.         | 43 6   |
| Draft loaded, ft. in. | 21 3/4 |
| Net tonnage           | 1440   |
| Gross tonnage         | 2309   |
| Deadweight tons       | 3760   |
| Speed in knots        | 9      |

#### ENGINE AND BOILERS

|                        |       |
|------------------------|-------|
| Triple expansion—steam |       |
| I. H. P.               | 1,200 |
| Boilers—Two Scotch     |       |
| Oil Burner             |       |

#### AUXILIARIES

All steam drive.  
These vessels left the lakes in November, 1925 with cargoes of motor car parts. The ONONDAGA for Buenos Aires and the ONEIDA for Norfolk. Both vessels will run in the coastwise service between Middle Atlantic ports and the gulf.

## S. S. Onondaga

Builder—American Shipbuilding Co.  
Bought by Ford Motor Co. June, 1924  
Converted from coal to oil burner  
Entered service—July, 1924



STEAMSHIP ONEIDA



STEAMSHIP ONONDAGA



clear of course that the traffic department with its years of elaborate experience in shipping finished products and parts to every section of the country and all over the world would sense at once the relative quality of service rendered by the company's own fleet as compared with that rendered by outside transportation agencies. Moreover this department is thoroughly familiar with all the routine and the delays and difficulties incident to shipping vast quantities of goods. In a real sense to give this critical traffic department satisfactory service necessarily means efficient operation.

The men in charge of operations approached the problem with absolutely unbiased and open minds. Their slate was clean, they had no old traditions or customs to follow. They had but one object and that was to move the company's products from its plant or the rail terminal to points of destination in the quickest way and at the least possible cost without loss or damage. To this problem they immediately devoted all their thoughts and energy. With complete control of all the factors in their own hands, they were able to try out new methods radically different from usual steamship practice. Of course, it was necessary to have experienced and licensed officers and seamen. The captain, however, was not expected to pass upon the manner of loading or discharging except insofar as his status as master of the vessel made it necessary for him to pass upon her seaworthiness at any stage or when completed.

#### New Methods Worked Out

Before any cargo was loaded a careful study was made of the proper location and distribution in the vessel of the component parts of such a cargo as would be carried, with due regard for order of discharge at port or ports of destination, and for the proper trim and stability of the vessel. It must be borne in mind that the men responsible knew very little or nothing of loading ships but they did have the very definite aim of studying every condition with the object of stowing the maximum amount at the least cost per unit of weight or measurement. In a similar way years before they had solved in equally unorthodox fashion the problem of quick economical and safe loading of box cars. With due regard for the important differences of the problem they now faced, their objective was the same in loading and discharging the ship. Steamship companies accepting cargo from thousands of shippers insist on sturdy and elaborate crating and packing and will not receive goods unless so safeguarded from loss or damage. Crating and packing is a serious item of expense

besides increasing the freight charges.

To avoid this unnecessary expense it was decided to do away with all boxing and crating and to stow all parts bare. All parts with the exception of the

### Three Voyage Reports

#### S. S. ONONDAGA VOYAGE NO. 1 Lakes, St. Lawrence and South America

| Port   | Arrived  | Sailed   |
|--|----------|----------|
| Detroit  | 11-5-24  | 11-5-24  |
| Montreal   | 11-11-24 | 11-14-24 |
| Rio de Janeiro   | 12-10-24 | 12-11-24 |
| Buenos Aires   | 12-15-24 | 12-28-24 |
| Rosario  | 12-29-24 | 1-4-25   |
| New York   | 2-6-25   |          |
| Detroit to Buenos Aires in nautical miles 7121   |          |          |
| Total distance on trip arrival New York 12,992   |          |          |
| Total time on trip, days, hours, minutes   |          |          |
| Average time in ports, days, hours, minutes  |          |          |
| Total tons of cargo carried on trip 4903   |          |          |
| Nature of cargo—tractors, auto parts and linseed.  |          |          |
| Note:—On voyage No. 1 the S. S. ONONDAGA loaded 1447 long tons of auto parts and tractors at Detroit and completed her cargo with 460 long tons at Montreal. On sailing from Montreal bound for Buenos Aires she had on board a full cargo of 100 tractors and parts for 2100 cars. On the return from Buenos Aires the ONONDAGA stopped at Rosario there taking on 2850 tons of linseed for New York. |          |          |

#### S. S. ONEIDA VOYAGE NO. 1 Lakes, St. Lawrence and Atlantic Coastwise

| Port   | Arrived  | Sailed   |
|--|----------|----------|
| Detroit  | 11-18-24 | 11-18-24 |
| Montreal   | 11-26-24 | 11-28-24 |
| Norfolk  | 12-1-24  | 12-2-24  |
| Jacksonville   | 12-7-24  | 12-9-24  |
| New Orleans  | 12-12-24 | 12-17-24 |
| Houston  | 12-26-24 |          |
| Total distance in nautical miles 6629                |          |          |
| Average distance miles per day 204                   |          |          |
| Total time on trip, days, hours, min. 48-22-10       |          |          |
| Average time in ports, days, hours, min. 2-3-5       |          |          |
| Total tons of cargo carried on trip 4408½            |          |          |
| Nature of cargo—auto parts, sugar and miscellaneous. |          |          |

Note:—On voyage No. 1 the S. S. ONEIDA loaded 1629 short tons auto parts at Detroit and completed the cargo with 766 short tons at Norfolk. On sailing from Norfolk she had on board all the major parts for 5000 cars. On the return trip from Houston to New York she had a cargo of 1650 long tons of sugar.

#### S. S. ONEIDA VOYAGE NO. 2 Atlantic Coastwise

| Port   | Arrived | Sailed  |
|--|---------|---------|
| New York   | 1-8-25  | 1-9-25  |
| Jacksonville   | 1-14-25 | 1-16-25 |
| New Orleans  | 1-19-25 | 1-22-25 |
| Houston  | 1-28-25 | 1-30-25 |
| Jacksonville   | 2-3-25  |         |
| Total distance in nautical miles 4445                          |         |         |
| Average distance, miles per day 141.5                          |         |         |
| Total time on trip, days, hours, min. 31 9 30                  |         |         |
| Average time in ports, days, hours, minutes                    |         |         |
| Total tons of cargo carried on trip 4712                       |         |         |
| Nature of cargo—auto parts, lumber, railroad ties and general. |         |         |

Note:—On voyage No. 2 the S. S. ONEIDA had a full cubic cargo of 2454 short tons out of New York. This cargo consisted of the motors and other parts for 5000 cars. She took on 130 sedan bodies at New Orleans for Houston. On the return trip 1700 tons of lumber and general cargo were loaded at Houston for Jacksonville and New York. Of this cargo 600 tons were discharged at Jacksonville where she in turn completed loading full cargo with railroad ties for New York.

motors were stowed and placed in position loose with lumber separation for certain parts, the whole when completely loaded clinging together like nails in a keg. Vertical separation and bracing was also applied as necessary. The ac-

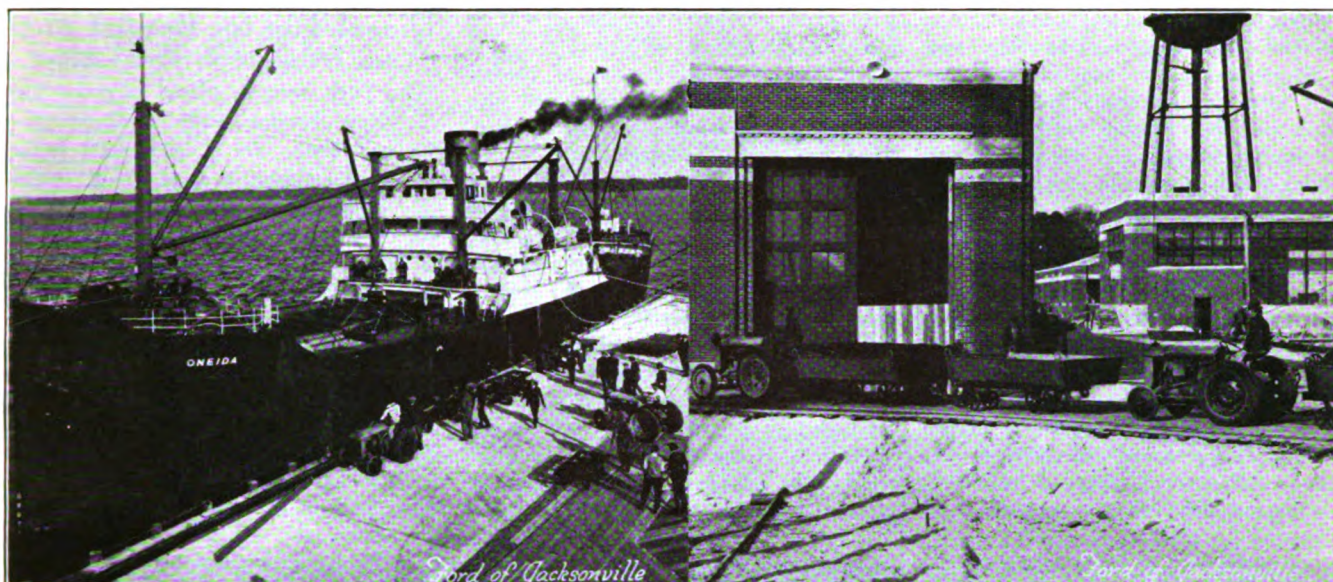
companying views of the different hatches show how neatly and compactly these parts were stowed. From the views taken on arrival at Norfolk after the trip through the St. Lawrence and down the coast in heavy weather it will be seen that no shifting or disarrangement occurred and this with only a partial cargo, due to limits of draft, a severer condition than with a full cargo.

#### How Bare Motors Are Stowed

The proper stowage of the bare motors was successfully accomplished by building up racks of timber made up of vertical and cross bars spaced to allow the motors to hang from the stringers just as they are suspended between the two longitudinal frame members of a finished car except that in this case nails took the place of the usual holding down bolts. One of the accompanying views shows these racks under construction with motors being fitted in position while another view shows the racks completed with all the motors in place. In order to shift the motors in a longitudinal direction from the position reached by the ships gear a number of fore and aft H-beams running parallel to each other were permanently suspended from two hatch strong backs which had been left in place and from deck beams beyond the limits of the hatch. These H-beams serve as tracks for rolling small hand hoists by which the motors are shifted to any desired position. This equipment is used both for loading and discharging. In unloading the motors are lifted bodily off the cross supports, the nails holding them down being pulled out automatically in lifting each individual motor. The large substantial square steel-plate pans shown in the illustrations are used for both loading and unloading all miscellaneous parts. Properly fitted bridles for them are also furnished so that the ships gear or shore gear can be used without the delay of special rigging up.

Another important phase of Ford's methods of loading and unloading these vessels is in the type of labor employed. At the Rouge plant the labor for loading the ships was chosen from different departments without any reference to previous experience, the only qualification being that of physical fitness. Among others, some office men, it is understood were invited to lend a hand. At all ports of call where there is a Ford branch all work of loading and unloading is done by the men of the plant at that port. Cargo is worked right through the 24 hours in three shifts. The exception to this rule is in the handling of return cargoes of a commercial nature not connected with the company's enterprises. These are handled

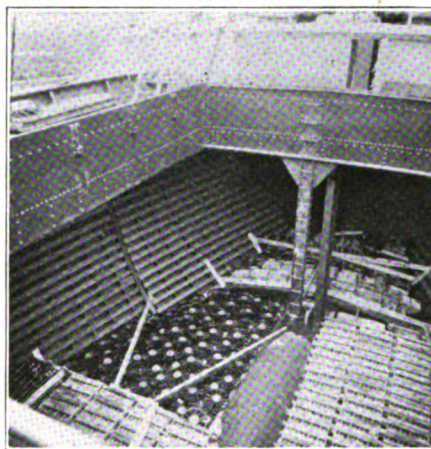




(LEFT)—UNLOADING AT JACKSONVILLE AT COMPANY'S OWN DOCK WITH PLANT EQUIPMENT. (RIGHT)— METHOD OF TRANSFER FROM SHIP TO WORKS AT JACKSONVILLE, USING LOCAL EQUIPMENT

on contract or on a straight time basis by regular stevedores. In this way the most efficient methods can be used and greater care can be maintained in guarding against damage due to careless handling.

A graphic illustration of the different methods of handling using outside longshoremen with their own equipment and using plant labor with plant equipment may be noted in the view showing the ONEIDA discharging cargo at Houston and the same vessel at the Ford dock in Jacksonville using tractors and trailers from ship to plant. Another interesting view shows the ONEIDA on her maiden voyage at New Orleans loading completely finished uncrated coupe and sedan bodies for delivery at Houston, in No. 3 hatch while parts for the New

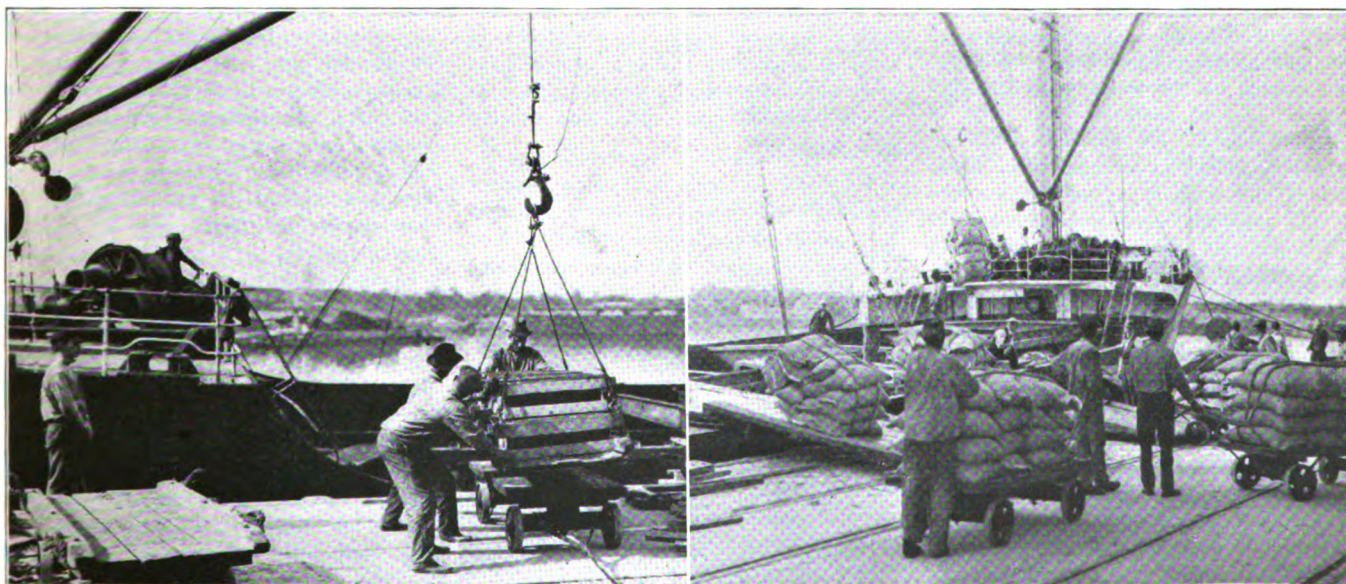


HOW CARGO WAS STOWED IN NO. 4 HATCH LEAVING RIVER ROUGE

Orleans plant are being unloaded from No. 4 hatch. The slightest carelessness would be costly in handling such cargo, and of course no steamship company would accept unprotected shipments of this character and be responsible for the delivered condition. It is only by complete control over every step and the exercise of particular care that the company's own vessels can do so.

A complete record of the services of the two ocean going vessels of the Ford fleet, from the start of operation, is given in the accompanying tables. The dispatch has been exceptionally good, partly due no doubt to working the ship throughout the 24 hours while in port, but also due to efficient methods of stowing and handling the cargo.

The method pursued in introducing



(LEFT)—REGULAR LONGSHOREMEN WORKING CARGO AT HOUSTON. (RIGHT)—S. S. ONEIDA GETS A RETURN CARGO OF SUGAR FROM HOUSTON— REGULAR STEVEDORES ARE DOING THE LOADING



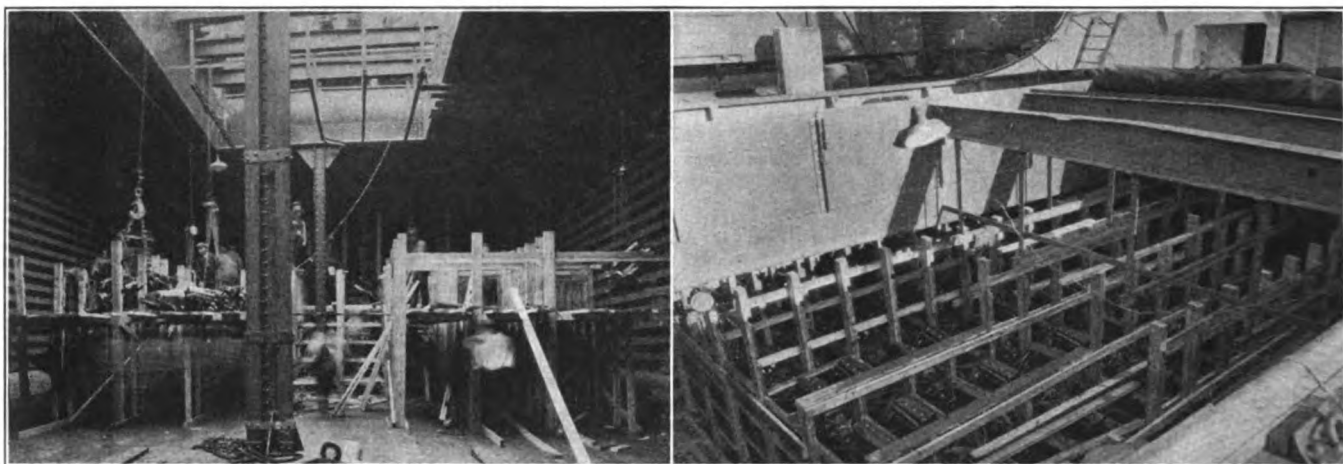
the new system of loading and unloading the ships was as follows. Both ships were of course loaded at the River Rouge plant after careful study and planning which included making ready all loading equipment such as the steel pans, bridles, chain hoists and overhead tracks for conveniently handling the heavier parts, particularly the motors. All of this preliminary work and actual loading was in charge of the one man delegated by the plant manager to run the steamship service successfully. The *ONONDAGA* of course needed no further attention after her departure from Montreal where her additional cargo was placed on board by hired stevedores. At Buenos Aires she discharged from ship to customs pier using stevedores, and

with plant and ship equipment will be available at all times at all ports of call. This crew will not consist of professional longshoremen but they will ultimately become especially skilled in handling this particular cargo.

The Ford spirit of peculiar loyalty, teamwork and devotion to duty applies to the officers and men of the seagoing personnel just as it does to the organization ashore. In numbers, the crew is equal to, if not greater than the best standards for this type and size of vessel. Though no exact figures are available the wages for the lowest paid man on board, it is understood, will be the equivalent of the \$5.00 a day minimum wage paid ashore. An extremely important point is made of the physical

## Diesel Tug for Barge Canal

Louis O'Donnell, 44 Whitehall street, New York, recently placed an order with the New London Ship & Engine Co., Groton, Conn., for a 300 shaft horsepower, 6 cylinder, 4 cycle, direct reversible diesel engine for installation in his tug boat *JAMES M. BROOKS*. The engine is to be of the latest type and will be direct connected to the propeller. Auxiliary equipment for heating, lighting and running the various pumps necessary for tug boat operation is to be installed and these auxiliaries will represent a simplified method of drive. The fuel oil capacity will be large, sufficient to enable the tug to make the trip from New York to Buffalo on a single fuelling.



(LEFT)—BUILDING UP THE RACKS IN THE HOLD OF THE SHIP IN WHICH THE MOTORS ARE STOWED. (RIGHT)—MOTORS STOWED BARE IN RACKS IN NO. 3 HATCH LEAVING RIVER ROUGE

the cargo was lightered to the company's plant.

A process of practical education was then begun, by the man in charge, an education in which each plant manager was to share intimately. He met the *ONEIDA* at Norfolk, and subsequently all the Gulf ports, studied local conditions and carried on the business of the ship without fuss or feathers on a basis of common sense. He eliminated all unnecessary delays as he met them, made use of the loading equipment carried on the ship, and arranged for continuous work day and night. On the first voyage stevedore firms supplied the labor at Norfolk, Jacksonville, and New Orleans but this labor was directed by the company representative. On the second voyage, plant men were used in loading and discharging the ship at New York, New Orleans, and Houston, for all cargo belonging to the company. In Jacksonville hired long-shoremen on an hourly basis were used. It is the intention to use plant men at all these ports exclusively except for commercial cargoes. Thus a crew especially trained to handle this cargo in the company's way

upkeep of the vessels. This might be termed general order No. 1 and cannot be ignored on pain of dismissal: The ship must be kept spotlessly clean from stem to stern and from truck to keel. Such a standard actively kept in force makes it easy, simple and natural to keep all machinery and gear in first class working order, thus increasing the efficiency of the entire ship and all the men on board.

So, Ford methods will again shatter old precedents and bring down the unit cost to an unheard of new level. The old line shipping companies may have something to learn from the fresh informal way Henry Ford looks at the problem of operating ships. It isn't exactly a legend nor has it come to the dignity of a saying of the American language, but there is a very widespread conviction in the minds of many people that anything he touches will turn out well. Experienced shipping men may laugh at some of his methods but all of them believe he is destined to become a permanent factor in the ocean transportation business.

This will eliminate the considerable delay of taking on coal, which is necessary with all steam boats operating on the New York State Barge canal. It will also enable the owners to benefit by the low fuel costs which prevail in New York harbor. The engine and boiler of the *Brooks* are now being removed at Bushey's Shipyard, Brooklyn, where the fuel tanks, miscellaneous foundations and auxiliary equipment will also be installed. The tug will then be towed to New London and the installation of the main engine and piping will be effected there. Delivery of the completed boat, it is expected will be made around May 1 in time for the opening of the Barge canal. The owner is experienced in the lighterage and towing in New York harbor and on the old Erie canal and he expects a material saving in operation by the reduced fuel costs, elimination of firemen and the frequent visits to coal docks. The *JAMES M. BROOKS* is a tug of 77 feet over all, 20 feet beam and will draw, after conversion, between 8 and 9 feet of water. She was built in 1920 and is considered by the owners, remarkably well suited for canal towing.



# Chicago Fights Court Decision

Offers to "Compromise" on 8500 Feet Per Second but Doubtful if Weeks Will Agree

**A**LTHOUGH the United States Supreme Court has ordered the sanitary district at Chicago to obey the instructions of the secretary of war concerning the volume of water which may be abstracted from Lake Michigan, it is not likely that vessel operators on the Great Lakes will find the going any easier during the coming season of navigation. The injunction which the Supreme Court upheld requires the sanitary district to limit its diversion of lake water to 4167 cubic feet per second. Chicago, however, is still using 10,000 cubic feet per second. The decision of the Supreme Court is as yet without practical effect. This is because the secretary of war has granted the Chicago authorities a breathing spell of 60 days after which, unless a further extension is granted, the original injunction must be obeyed.

It now seems rather probable that a further extension will be forthcoming on the strength of the plea that Chicago's present sanitary arrangements necessitate 10,000 cubic feet per second and that public health would be endangered if the flow through the drainage canal were diminished without first providing alternate methods for the disposal of Chicago's sewage.

## Big Fight Next Winter

Meanwhile, the sanitary district authorities are moving heaven and earth in Washington to get the law changed thus circumventing the Supreme Court's decision. Officials closely in touch with the leading vessel owning interests on the Great Lakes do not believe that this new legislation which Chicago is promoting will come to a head during this session of congress. It is expected, therefore, that the whole fight will be postponed until next winter. Meanwhile, under temporary permission of the secretary of war, things will go on as before with the sanitary district using 10,000 feet of water per second instead of 4167 feet as implied in the Supreme Court's decision.

Even if only 4167 cubic feet were taken this year, it is not likely that lake levels would be affected favorably for some time owing to the enormous area of water involved. If a final decision favorable to navigation interests is reached next winter it is not likely that its benefits would become

apparent until 1927 or 1928. Eventually, however, the efforts being made by the Lake Carriers association on behalf of all navigation interests on the Great Lakes will bear fruit.

Meanwhile, it has been clearly pointed out by experts that the proposed deep water channel through the

and the following represents the point of view of prominent business interests in the Illinois city:

Since the United States Supreme Court on Jan. 5 allowed 60 days within which to comply with the war department permit limiting the diversion of Lake Michigan into the Chicago drainage canal to 4167 cubic feet per second, events indicate that Chicago will win more than it loses.

Secretary of War Weeks has before him the recommendations of army engineers that a diversion of 8500 feet per second be permitted, contingent upon Chicago's getting under way at once a program that will, within a period of 5 years, provide for metering 90 per cent of its water service and the completion of a disposal works sufficient to treat the sewage of a population of 1,200,000, permitting the federal government to supervise both the metering and the disposal work, and posting a \$1,000,000 bond that Chicago will pay its share of compensating works to raise lake levels if this be found necessary.

## Will Consider Recommendation

At present the outlook is that Secretary Weeks will act upon this recommendation. It is believed that in insisting on a 10,000 foot flow Chicago has been advancing an outside figure, and that 8500 feet will be sufficient. Under the terms of the army engineers' recommendations the diversion is to be reduced to 4400 feet at the end of five years. Meanwhile, if 90 per cent of the city's water service is metered, the waste flow into the drainage canal will be reduced some 2100 feet and the necessity for diversion lessened that much.

Since the court's decision Jan. 5, the opposition to Chicago, which includes Canada and all of the rest of the Great Lakes region, has necessarily been limited to pressure upon the war department to hold to its 4167 foot permit. The court decision did not directly restrict diversion to this volume but held Chicago amenable to the war department's judgment in the matter.

The McCormick congressional waterways commission has just reported in favor of a diversion of 10,000 feet as necessary to maintenance of a proper depth in the Lakes-to-Gulf waterway. The New Orleans association of commerce has adopted a resolution of like import. The Illinois legislature, after

## Close Sluice Gates, Orders Weeks

Secretary of war Weeks threw a bombshell into the camp of the Chicago water diversionists when he told them on Feb. 20 that they would have to get down to 4167 cubic feet per second "at as early a date as practicable." Just what this means remains to be seen but indicates that the sanitary district will not be given unlimited time to provide new means for handling Chicago's sewage. Mr. Week's statement is as follows:

"I care for no argument justifying the permanent diversion of 10,000 cubic feet a second nor will I, as an official, grant any permission to exceed the present diversion heretofore authorized except as a temporary measure, and then only for such a length of time as is necessary for the sanitary district of Chicago in good faith to meet conditions that now confront them.

"As I view the situation I am concerned in the sanitary district of Chicago reducing its diversion of the waters of Lake Michigan to that heretofore authorized, namely 4167 cubic feet of water a second at as early a date as practicable. Now, gentlemen, with this limitation you may proceed."

Illinois canal and down the Mississippi river would require only 1000 cubic feet per second. It is believed that when this project has served its purpose as the stalking horse for the sanitary district, it will quietly be dropped. Meanwhile, all that stands between the vessel owners of the Great Lakes and the losses which would result from an even greater reduction in the depth of water are the courageous efforts of the Lake Carriers association to obtain a decision on this great public question on its merits.

The Chicago interests are still fighting



siding with Chicago's opposition all through the fight, on Feb. 4 adopted a resolution requesting Secretary Weeks to permit the present diversion. Senator McKellar, of Tennessee, has voiced a new note in declaring that Secretary Weeks would usurp the power of congress, the Illinois legislature and the Chicago city council by insisting upon water metering and sewage disposal.

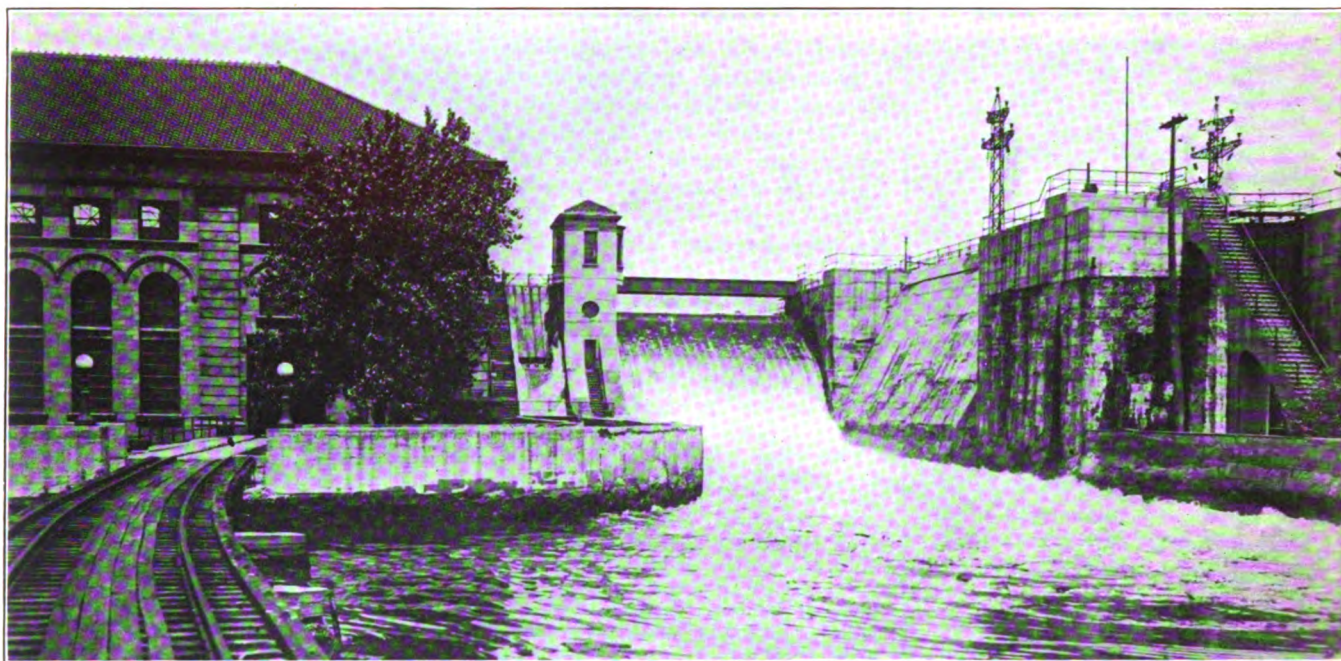
The opposition of Canada and Great Lakes ports continues unrelenting. With navigation about to open, they are reminded that every inch lake levels are decreased the average bulk freighter loads 100 tons less of iron ore and coal. In the meantime the diversion of 10,000 feet at Chicago continues, with the next move

## For Heroism and Valor

**T**HIS is an unusual and strange document for a son to find among his father's papers, after a lapse of half a century—53 years to be exact, yet it happened to Harry C. McNaughton, of Sault Ste. Marie, Mich., recently, when he found the testimonial in an ancient desk that had belonged to his father, the late Capt. W. W. McNaughton, in his home in Sault Ste. Marie. The testimonial is undoubtedly of marine historical value, as it identifies the captains and steamers that arrived from Lake Superior safely, in the great storm of Nov. 20 and 21, 1872. It was the intention of the captains who presented

laid up in Sault Ste. Marie, the captains and crews going overland to their home ports.

Capt. Roy McNaughton, one of Captain McNaughton's grandsons has sailed on the Great Lakes for a number of years as captain of the Cleveland-Cliffs steamer NEGAUNEE. It is interesting to note that George P. McKay, afterward head of the Lake Carriers' association, and Captain Alexander McDougall, afterward inventor of the whaleback type of ship, are both among the signers of this document. Captain McNaughton, who lived to be 83 years old is buried at Sault Ste. Marie, and as far as is known not one of the captains who signed the testimonial which is given below is



THE SPILLWAY IN THE SANITARY DISTRICT CANAL, WHERE THE AMOUNT OF WATER TAKEN FROM LAKE MICHIGAN IS CONTROLLED

up to Secretary Weeks in the shape of action on the request of Chicago that he issue a permit for 10,000 feet.

## Error Is Corrected

In the February issue of *MARINE REVIEW* on page 44 some particulars of equipment were given concerning the motorship HENRY FORD II and the BENSON FORD, which are incorrect. It was stated that the electric motors for driving all auxiliaries were of General Electric make. This is in error as the motors for the deck auxiliaries were furnished by Electro Dynamic Co., Bayonne, N. J., and have Cutler-Hammer control equipment. Motors were also furnished by this same company for driving other auxiliaries such as the anchor windlass and the hatch doors on one of the vessels.

the testimonial to Captain McNaughton, to present him with a gold watch for going out in the tug CUSHING and rescuing the crews of the schooners EXILE and GOLDEN RULE wrecked on the shores of Lake Superior at Maimainse and Whitefish bay. But there were no gold watches in the settlement of Sault Ste. Marie at that time, so they presented him with the testimonial and the money to purchase a watch.

Captain McNaughton and his crew of three men whose names unfortunately are not now known made a particularly hazardous trip to the schooner EXILE, and rescued the crew, who were lashed in the rigging. Other boats arriving in the Soo were themselves too crippled to go to the aid of the EXILE. Captain McNaughton was highly commended for this act by the captains of the various steamers, in the Cleveland press of the time. Their boats were frozen in and

still living. But the testimonial remains, mute evidence of a brave act of many years ago.

### TO CAPT. W. W. McNAUGHTON FOR HEROISM AND VALOUR:

We, the undersigned officers of steamers and sailing vessels, do hereby tender to you in appreciation of your services the several sums set opposite our names and hope it will be as freely accepted as tendered:

|  |         |
|--|---------|
| Geo. P. McKay .....                      | \$10.00 |
| C. M. Davis .....                        | \$10.00 |
| M. Niland, ARIZONA .....                 | \$10.00 |
| Jas. Lawless, Schooner ESCANABA .....    | \$10.00 |
| C. Peterson, Schooner EXILE .....        | \$10.00 |
| J. A. Holmes, Schooner GOLDEN RULE ..... | \$10.00 |
| Capt. Davis, Schooner MIDELSEX .....     | \$ 5.00 |
| A. Stowell, Bark CAMBRIDGE .....         | \$10.00 |
| Alex. McDougall, Proprietor, JAPAN ..... | \$10.00 |
| Edward Kelley, Steamer ST. LOUIS .....   | \$10.00 |
| Geo. Stone, Steamer J. S. FAY .....      | \$10.00 |

On the reverse side of the testimonial in pencil is the date Nov. 23, 1872. This may be the date the testimonial was presented to Captain McNaughton, as it was three days after the storm. This interesting document is now made public for the first time.



# While Congress Wastes Millions Ohio River Traffic Languishes

## Half a Century of Folly

BY FRED B. PLETCHER

*Washington Correspondent, Marine Review*

**S**TARTLING waste of public money in the last fifty years, almost criminal in its nature, is disclosed in the slothful course of congress in dealing with improvement plans for the development of the navigable inland waterway channels of the country.

The Ohio river project is outstanding as an example of the culpable negligence that has been permitted to exist for a half century in the extensive but dallying undertakings for the development of the great natural channels of transportation. Despite the fact that hundreds of thousands of square miles of shipping territory are embraced in the Ohio river drainage domain, and that 58 per cent of the members of congress represent the area involved in this project, the improvements only are a little more than two-thirds completed, with almost \$81,000,000 having been expended on the Ohio river since 1875,

In 1875 the improvement was started on the old plan of an entirely open river navigation, the desirable depth on the bars to be obtained by wing dams and dredging. From 1875 to 1910, the huge sum of \$17,657,274 was spent, only to result in 1910 in an entire change of the plans of the project under which the improvements now are being carried on. This present project has in view a navigable channel secured by locks and dams when the river is below a 9-foot stage. This has been coupled with open river work where locks and dams have not been provided.

### What Might Have Been

If \$60,000,000 had been appropriated in 1875 when the cost of labor and materials was especially low, and if this sum had been properly expended over a period of 10 years by following the methods used in the building of the Panama canal, the work could have been completed entirely within that period of time and at a cost of only \$60,000,000, it was declared by James E. Smith, of St. Louis, president of the Mississippi Valley association, in a statement before the house rivers and harbors committee last year.

"Think of the tremendous loss to the people of the Ohio valley that has re-

sulted from this foolish and inexcusable procedure," said Mr. Smith.

"Instead of having that great waterway completed not later than 1885 at a cost of \$60,000,000, nearly \$81,000,000 has been expended upon it and it is today little more than two-thirds completed. Its completion will cost an additional \$25,000,000. As the work now is being carried on, 15 to 20 years more

### Slow Progress

**I**N THE 1910 rivers and harbors bill, clauses also were adopted providing for the completion of an 8-foot channel in the Mississippi river between Cairo and St. Louis at an estimated cost of \$21,000,000 to be completed in 12 years. This designated time expired two years ago, and the work is not completed. As a result of this negligence, the government barge line on the lower Mississippi between St. Louis and New Orleans is operated on this portion of the river at a loss, not having a dependable channel. Private shipping likewise is handicapped. At the rate this work already has been undertaken, about 130 years will be necessary to complete the job that was to have been completed in 12 years.

no doubt will be required for its completion.

"Think of allowing an idle investment of \$81,000,000 remaining unproductive for so long a period of years. Think of it being allowed to lie idle and useless for 20 years longer, when it can be converted into a big-paying investment within from four to five years' time."

A conservative estimate shows that at an interest charge of 5 per cent upon the amount of money which will have been spent on this project up to the time of its completion, the accumulated interest alone will amount to more than \$120,000,000, or double the amount the entire project from Pittsburgh to Cairo, Ill., would have cost if the proper

methods had been employed from the beginning for this work.

But this is not all of the lamentable story, as the head of the Mississippi Valley association pointed out to the house committee. If this waterway had been completed 40 years ago, as could have been done, it would have been transporting throughout that long period hundreds of millions of tons of the products of the country's greatest industrial area, the Ohio valley, at a saving of many hundreds of millions of dollars in freights. It is pointed out also that hundreds of new industries also might have been established on this avenue of cheap transportation.

Congress first seemed to sense the importance of putting the great trunk line waterways of the Mississippi valley into use as carriers of steel, coal, coke and many other commodities in 1910. At that time a bill was passed which provided for the completion of a 9-foot channel in the Ohio river from Pittsburgh to Cairo at an estimated cost of \$63,731,000, with the declared intention of completing the work in 12 years.

### Improvements Are in Sight

Succeeding sessions of congress, however, failed to keep faith. The 12-year period expired more than two years ago and in the meantime the work has been dragging. Under the present plan great benefits are in sight even though the final completion of the river improvement has produced tremendous waste of money and time in its undertaking. The plan contemplates a 9-foot channel from Pittsburgh to Cairo for 10 months of the year. Improvement of the Mississippi below Cairo and St. Louis will make more available a shipping course from Pittsburgh to the Gulf.

When the slack-water system has been extended far enough down stream to permit of continuous navigation at all times, except when interrupted by floods and ice, the really great benefits of the undertaking will be realized. Commerce now is being moved by barge from the head of the river to points on the lower Ohio and Mississippi rivers and upstream shipments of coal, coke and other commodities have been going on for



some years. The proposed rail-water rates by way of the river to Louisville, thence via the Louisville & Nashville railroad to Memphis, are offering cheaper freight movement for transportation of iron and steel and other goods from Pittsburgh in trips of about 12 days.

The Jones & Laughlin Steel Corp. was a pioneer among private shipping interests in making use of the Ohio river channel. The Carnegie Steel Co., at Pittsburgh, also has been operating a fleet of barges and tows for some time, and the Pittsburgh Steel Co. and the Wheeling Steel Corp., at Wheeling, have been making such use of river transportation as is available in certain months.

The effect of the dams already completed on the upper river is being reflected in the marked increase in general traffic and in the amount of coal shipped from the mines along the Monongahela river to industrial plants and shipping points along the lower Ohio. Coke in considerable quantities also is being shipped from Monongahela river points to New Cumberland, W. Va., for steel operations. The West Virginia coal mines send coal up river to industrial plants near the head of the channel.

In the low season of 1917-1923 about 1,640,000 tons of coal were shipped from the Kanawha river coal fields to Cincinnati and other points along the Ohio river by releasing water impounded in the pools formed by the dams on the upper Ohio and its tributaries, creating artificial rises and assisting coal fleets with partially loaded barges over the shoals in the unimproved section of the river.

Low water stage on the Ohio prevails generally for about five months in the year, usually between July and November, inclusive. The high water stage occurs usually during the spring floods, but moderate freshets may take place at any season; they are of infrequent occurrence, however, during the summer and autumn months. In its original condition the Ohio river was much obstructed throughout its entire length by snags, rocks and gravel and sand bars, rendering navigation difficult and hazardous. The width of the channel varied to great extent. At extreme low water, the depth for navigation over the worst shoals ranged from one foot at Pittsburgh and Cincinnati to two feet between Cincinnati and the mouth of the river. Between shoals are pools running to depths of 30 feet even in extreme low water. With the depth on the worst shoals at three feet or more the river was navigable for steamboats and other craft.

Artificial waves were used last year during low-water periods to facilitate

large shipments of coal and metal products. Government figures show that commerce has increased only slightly on the Ohio river in the last fiscal year, the main items showing heavier shipments having been coal and steel. No material changes in the transportation lines were made.

In the calendar year 1923, about 73

### Big Sums Spent

**A** TOTAL of \$40,000,000 is made available in a lump sum for rivers and harbors in the war department supply bill for the fiscal year, which has passed both houses of congress. It is not known just how much will be apportioned from this for Ohio river development, as the allotments are to be made under direction of the secretary of war and under the supervision of the chief of engineers of the army. The chief of the army engineers will issue a statement soon showing how the lump sum has been apportioned. Upon the war department therefore, rests the responsibility of parceling out funds for Ohio river development under this bill. In addition a \$39,000,000 rivers and harbors bill for development of waterways has been reported out of the house rivers and harbors committee and has passed the house intact. Changes involving additions to some of the items in the house bill were made in the senate commerce committee, and some deductions also have been demanded. As the bill finally goes onto the senate floor, it is considerably changed from its original form. The sum of \$53,000,000 had been sought in the war department bill, but this amount was cut down to \$40,000,000. This sum is to be expended only upon the projects already authorized and includes a large number of improvements and several surveys, out of which the Ohio river project may get only a comparatively small share.

per cent of the Ohio river tonnage was coal, 15 per cent was sand and gravel, 5 per cent was metal products, 2 per cent stone, 1 per cent was oil, and the remainder miscellaneous freight. General cargo does not count seriously.

### Many Locks and Dams

Originally, 54 locks and dams were contemplated, and 37 now are in operation. Fifteen are incomplete, eight of which are under construction and four of which have not been started at all. The

first lock and dam for Ohio river improvement was provided by the rivers and harbors act of nearly 50 years ago, which made appropriation for a lock and movable dam at Davis Island, at West Bellevue, Pa., nearly five miles below the head of the river. Building of additional dams was provided for periodically in the next 28 years. River and harbor acts authorized dam No. 6 in 1890; dams Nos. 2, 3, 4 and 5 in June, 1896; Nos. 13 and 18 in March, 1899; Nos. 8, 11, 19 and 37 in June, 1902; and No. 26 in March, 1907.

Thus the amount expended on original and subsequent projects, up to the time present plan of operations was started under the rivers and harbors act of 1910, was \$17,657,273.78 this total including the amount spent in the purchase of the Louisville and Portland canal but not including about \$250,000 received as dividends on stock of the Louisville & Portland Canal Co., held by the government.

The total number of dams included in the present undertaking, since the abandonment of dams 1 and 2 upon completion of the dam at Emsworth, Pa., is 52. The project provides for one lock with usable dimensions of 110 x 600 feet at each dam and in addition a second lock at the Emsworth dam with dimensions of 56 x 360 feet and a flight of two locks at No. 41, at Louisville, with dimensions of 80 x 310 feet.

Except at Emsworth, all of the dams are of the movable type with navigable passes varying in length from 600 to 900 feet, closed by wickets of the Chanoine type. The dams also are fitted with one or more regulating weirs. The dam at Louisville is at the upper end of the Louisville and Portland canal, the latter being two miles long and 200 feet wide at the narrowest section. The locks are at the lower end of this canal.

At present the river project is completed to dam 31, three miles below Portsmouth, O., and 358.4 miles below Pittsburgh. In the last fiscal year practically all of the heavy stone and concrete removed at the abandoned dams Nos. 1 and 2 were deposited at the downstream side of the Emsworth main channel dam at a cost of \$51,000. The dam at Emsworth was fixed to replace the old dams abandoned, and a large quantity of hot furnace slag was deposited below the abutment of the main channel dam for protection of the structure.

In this same bill it was provided for completion of a 6-foot channel in the upper Mississippi from St. Louis to Minneapolis and St. Paul at an estimated cost of \$27,000,000, the work also to have been done in 12 years. That time likewise expired two years ago with the work less than one-half completed.



In June, 1912, congress passed a bill providing for the building of a 6-foot channel in the Missouri river from its mouth to Kansas City at an estimated cost of \$20,000,000, with the declared intention of completing the work within 10 years. Apparently it was the plan of congress that these four projects should be completed at the same time. The latter is about 40 per cent completed, with the time limit also having expired two years ago.

A total of \$174,000,000 has been spent upon these four river projects, and as President Smith, of the Mississippi Valley association, pointed out, "this vast amount of money will remain an idle, wasteful and almost useless expenditure until their improvement is completed." A total of \$73,000,000 was sought in congress last year for the four projects, which, it was claimed, would have put them in operation in five years. This amount was asked in the rivers and harbors bill introduced by Representative Cleveland A. Newton, of Missouri. The amount expended on Ohio river work in

the fiscal year ended June 30, last, was \$5,904,824. The amount allotted this project in the fiscal year was \$7,545,400. How the Ohio river project itself will fare in the rivers and harbors legislative hodge-podge this year remains to be seen. Considerable shall depend also upon how the money is apportioned for the different projects.

#### Must Use Our Rivers

It is estimated that the traffic of the country has increased 60 to 70 per cent in the last 10 years. It must be apparent that the nation has insufficient transportation facilities to satisfy the reasonable demand of the public, notwithstanding efforts toward increasingly economical operation by the railroads. With industry producing at its maximum, the rail facilities will find demand too great to be met.

Testimony before the house rivers and harbors committee by A. B. Shepherd, who represented the Jones & Laughlin Steel Corp. and the Pittsburgh Chamber of Commerce, indicated that the Jones

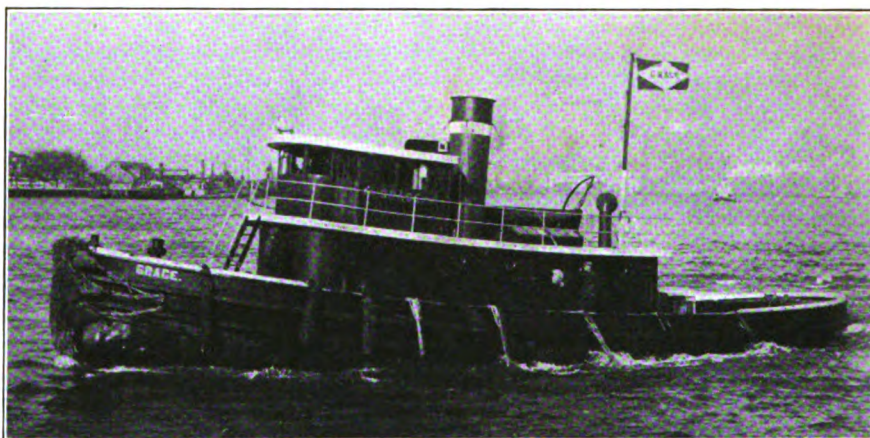
& Laughlin company intends to expand its river shipping facilities with the end of the Ohio river improvement in sight. The Carnegie Steel Co. is making similar extensive plans for barge and tow construction. A saving of \$2 to \$3 a ton over all-rail freights is effected in present shipments from Pittsburgh to Memphis by river and rail routes. The Jones & Laughlin company has been making use of the upper Ohio and Monongahela rivers for shipping since 1853. This company has 10 open barges, costings about \$13,500 each; five closed ones, costing \$18,400 each; nine steamboats; six harbor barges; 176 barges which have been used indiscriminately on the Monongahela and Ohio rivers; eight large towboats, and another being built now. Improvement of river terminal facilities will be developed, according to plans, as the river project nears completion. Government engineers estimate that with no reductions in appropriations requested the work can be completed within three to five years. This work should progress without let up.

## Severe Trial for Oil Engined Tug

THE GRACE, a new oil engined tug shown in the accompanying illustration has recently been added to the harbor facilities, at New York, of the Grace Line. Designed for general harbor use, in docking ships, shifting lighters and barges this tug was built by the Spedden Shipbuilding Co., Baltimore. She is of steel construction, 76 feet in length overall, 72 feet 9 inches long on the load water line, 19 feet in beam, nine feet nine inches in molded depth and eight feet in draft. The maximum speed, determined on a measured course, is 11¼ miles. For propelling machinery she has an Ingersoll-Rand oil engine of 320 rated horsepower, directly connected to the propeller. The engine is of the six cylinder solid injection type, especially suitable for tugs.

In lines and outward appearance the GRACE is very much like any steam tug of her class. Comfortable accommodations have been fitted for a total crew of five men, the captain, engineer, oiler and two deck hands.

After completion in Baltimore at the end of December last she proceeded on her voyage to New York, through the Delaware and Chesapeake canal. For 50 miles before reaching the eastern outlet she was forced to make her way through ice of a maximum thickness in places of seven inches. Cold and heavy weather was encountered on the remaining part of the voyage down the Delaware and coastwise to New York, where she arrived



NEW OIL ENGINED TUG "GRACE" IN NEW YORK HARBOR

covered with ice, after a passage from Baltimore of 32½ hours duration. This trip afforded an unusually severe test of the strength of hull, the reliability of the machinery and general seaworthiness.

In her regular service it has been found according to report that the Grace maneuvers with flexibility and responds promptly to every signal. The steering gear is driven by a reversible air motor controlled by a lever from the bridge which opens and closes a compressed air throttle and gives the desired direction of helm.

All ships of the Matson Navigation Co.'s fleet which were laid up during the dull season in sugar movements from Hawaii to San Francisco will go back in-

to service this month with the exception of the ENTERPRISE. The ships which were laid up during the winter included the MANULANI, MAKIKI, MAUNA ALA and ANNIE JOHNSON. All of them are now needed to handle the Hawaiian sugar crop which during 1925 should exceed or equal the 1924 crop of more than 700,000 tons. During the summer months the Matson fleet of 14 ships also handles capacity cargoes of canned pineapples, the 1925 Hawaiian crop of which should run close to 7,000,000 cases.

The Pennsylvania railroad has awarded to Heyl & Patterson, Inc., New York and Pittsburgh, the contract for the new 120-ton car dumper which is to be erected at Sandusky, O.



## How Successful Dock Operators Have Met Problems of Giving Best Service to Ships

# Better Pier Sheds Are Now Needed

By C. E. Hicks

**Chief Engineer, New York Dock Co.**

WHEN Hendrick Hudson brought the HALF MOON into the wind and dropped his mud-hook off the Battery, his small boats were sent to shore for water and food. These supplies his men carried to the boats afloat in shallow water, the presence of a few redskins in the background expediting their movements, no doubt. The redskins disappeared, tonnage increased and wharves were built to facilitate handling of cargoes. These were leisurely times and open wharves sufficed.

Probably the advent of steam changed

this condition along with many others. Wharves became piers and piers grew steadily longer to keep pace with the rapidly growing steamships. These ships were costly and carrying charges were a constant burden even when they lay in port.

Our forefathers built sheds on their piers to afford opportunity for quicker discharge of inbound cargoes and for the convenient assembly of outbound shipments ready for loading.

These sheds were born of necessity but surely sired by economy. Because

the piers, like gangling youths, had grown long before they grew wide, the sheds were narrow and extended to the stringpiece on both sides. They were constructed of timber throughout—economy of space and material no doubt, but neither a happy operating condition nor a choice fire risk. Ships continued to grow and the sheds stood still. Thus came maintenance problems and damage claims, congestion in the narrow driveways and excessive costs for piling cargo up to the roof trusses, a criminal waste in a transit shed.

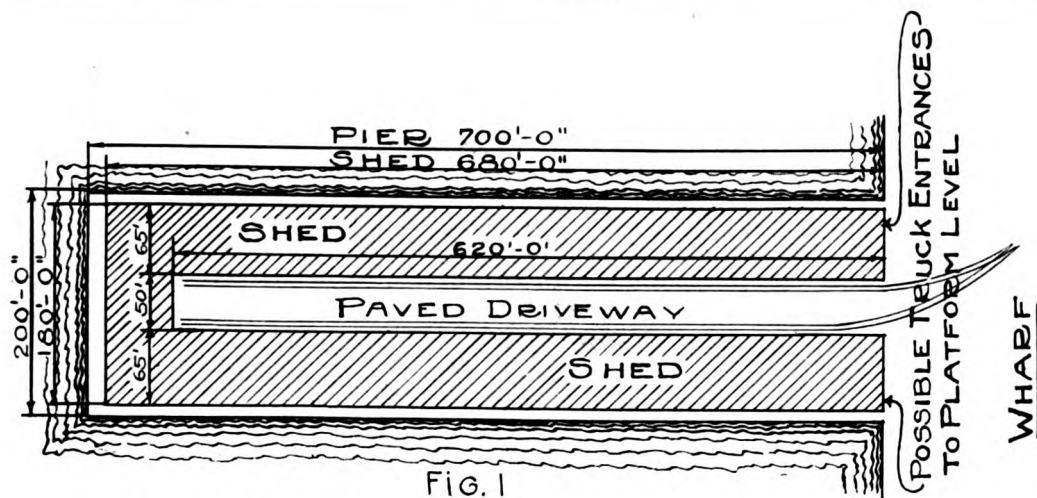


FIG. 1

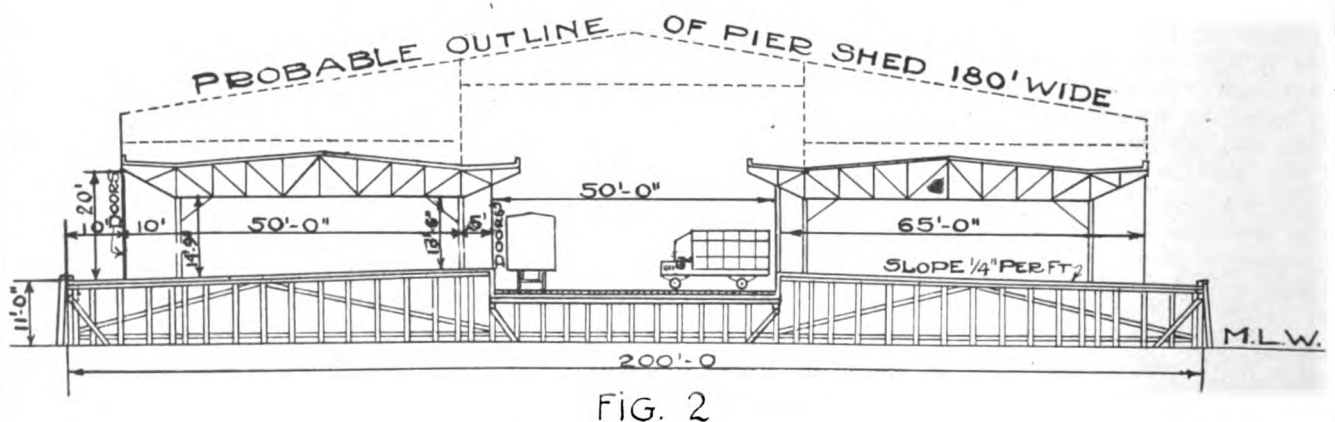


FIG. 2

Fig. 1—Plan of proposed pier to permit quicker handling of cargo. Fig. 2—Cross-section of proposed pier



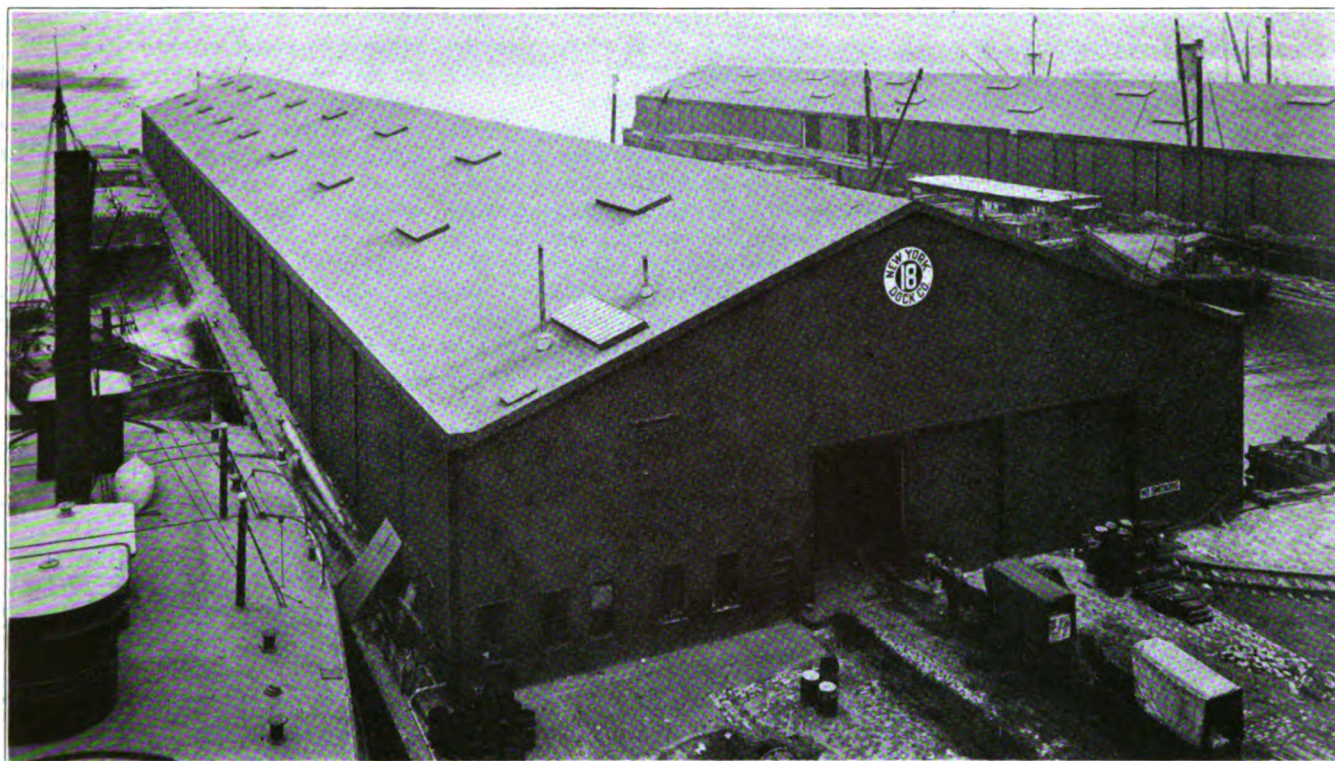


FIG. 3—A TYPICAL MODERN PIER SHED

New York Dock Co.'s pier No. 18, built in 1916. The pier is 125 feet wide, the shed 115 feet. Continuous doors form the sides of the shed, which is equipped with automatic sprinklers for fire protection. A railroad track runs the full length of the pier in the center of the shed

Nature took its course as usual. As the old sheds burned, collapsed or became so hopelessly obsolete that they were ruthlessly pulled down, other sheds were built to replace them. Higher sheds, wider sheds, larger doors, broader stringpieces, all corrected the old faults. Topped with cargo masts, equipped with automatic sprinklers, sturdy steel framed structures with roof trusses spanning one hundred feet or more, these were sheds the like of which our forefathers had not imagined.

We, who designed them and watched them come into being out of white lines on blue paper, were proud of them. We liked our continuous doors, which eliminated the shifting of the ships to make the hatches meet the doors, and the broader stringpieces which reduced the possibility of damage to the shed and expedited the raising and lowering of drafts of cargo. We liked the wide open pier decks, amply lighted by skylights and monitors, affording more room for the movements of trucks and longshoremen across and along the pier. We applied the rapidly developing art of reinforced concrete to our pier decks and provided smooth pavements for the trucks to roll over. We gave the operating men what they wanted as nearly as we could with the material we had and rejoiced with them in the improved conditions.

There is a lull in waterfront improvement work at present to compensate for some years of unusual activity along

these lines and advantage should be taken of this opportunity to consider the pier shed of the future.

Fire protection experts look with horror at the pier sheds in New York and many other ports. To them a long, narrow, undivided structure built of non-fireproof materials and filled with more or less inflammable merchandise is nothing but a cordial invitation to their sworn enemy, fire. Their judgment is based on experience and backed by statistics. The fact that similar statements can be made regarding other classes of structures is no reason for disregarding their opinion. But the paternal influence of economy is still a factor and the high cost of constructing fireproof piers and sheds will have to be offset by corresponding reductions in operating, maintenance and insurance costs before pier owners can justify such capital investments. In the meantime, it behooves us to be guided by their recommendations as much as possible.

Unprotected steel work can be fireproofed, excessive areas can be reduced by cross walls of fire-resistive material and fireproof roofing materials are available. These and other features can be incorporated in new structures and should be given more consideration in the design of future pier sheds.

The more important question from the viewpoint of the shipowner and operator is one of layout or arrangement. On this the experts disagree. The new City piers at Staten Island, New York,

constitute an outstanding example of this difference of opinion. Twelve pier sheds, were designed and constructed, insofar as arrangement was concerned, to meet the specifications of the prospective tenants and the result proved only that there is no definite trend toward any particular type of shed for handling general cargo. In this group of piers, we find 1-story sheds and 2-story sheds, narrow stringpieces and wide stringpieces, railroad tracks in the center of the shed and outside the shed, complete crane equipment on two piers and not even cargo masts on others.

The shed on a pier used for transoceanic or coastwise cargo is a transit shed and its primary purpose is to provide protection for cargo during the time it is being assembled for loading or discharged and sorted for delivery. The most important condition imposed is that it shall do this with the least possible interference with these operations. Pier superintendents and stevedores using the sheds are always in position to suggest improvements and their suggestions are most valuable. The designer must also consider construction cost, maintenance, insurance, depreciation and similar items of interest to the owners of such property.

Cargo capacity of ships per lineal foot of length, sometimes referred to as cargo density, has been constantly increasing. High piling of cargo in transit is avoided whenever possible. The motor truck is an important factor in handling



freight and promises to replace lighters to a greatly increased extent.

These conditions indicate a constantly increasing width of piers in New York. Old piers 75 or 80 feet wide are being replaced with piers 125 and 150 feet wide. When this question is discussed, it is not unusual to find widths of 200 to 350 feet being seriously considered. While such widths are found in many ports, especially on the Pacific coast, they are usually accompanied by greater lengths and the area of the pier is only partially covered over. Along the Manhattan and Brooklyn shores, in the most valuable part of the port, the length of piers is limited, seldom exceed-

122,400 square feet. At least two driveways would have to be maintained the full length of this pier for trucks, with occasional cross gang ways.

Assuming these driveways to be 25 feet wide and 620 feet long, they occupy an area of 31,000 square feet—more than one quarter of the covered area expensively roofed over for the convenience of trucks. This is certainly more consideration than they are given at any railroad freight station, factory or warehouse in the country and it is doubtful if it is appreciated or even if it is an advantageous arrangement for the trucks. It surely is not a good one for the steamship company, result-

duced from 122,400 square feet in our example to 91,400 square feet, with consequent savings in interest on investment, insurance, maintenance and depreciation and these savings would aggregate a considerable sum. The shed required, as illustrated in Fig. 2, would be cheaper to build to present specifications and would offer the possibility of constructing, without increasing present unit costs, a permanent type of structure more acceptable as a risk to the underwriters and with consequent saving of maintenance expense.

The elimination of trucks from the space used for cargo would permit a more economical design of the pier.

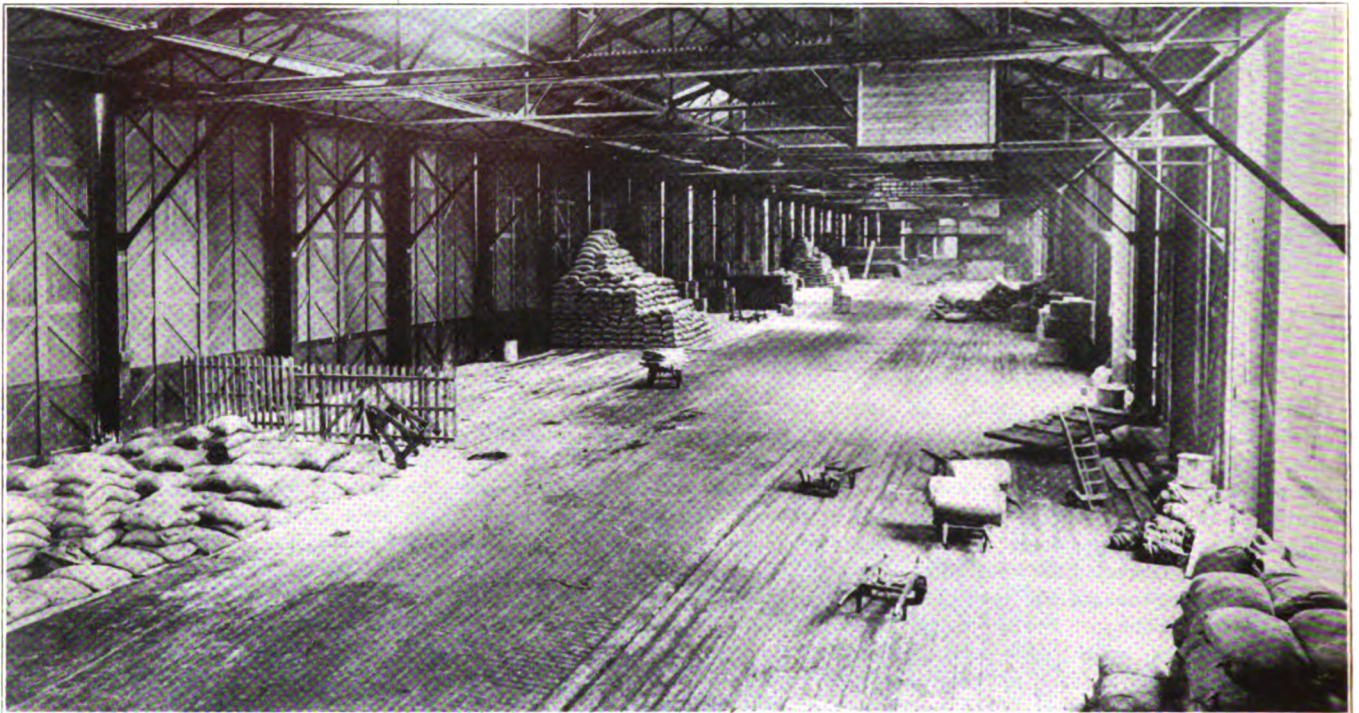


FIG. 4—INTERIOR OF PIER SHED

New York Dock Co.'s pier No. 36, illustrating present practice in pier shed design. Note continuous doors, paved driveway and automatic sprinkler equipment

ing 1000 feet and probably averaging not more than 700 feet. This means that all space to be used for cargo must be covered so that it can be used in the most efficient manner. What type of shed is suitable for such piers? Shall we continue to let natural growth take its course and simply build larger sheds or can we evolve or adopt some more satisfactory type even if we must go through the agony of changing our "customs?"

Consider the shed for a pier 200 feet wide. Take off 10 feet on each side to leave a wide apron outside the shed and give the stevedore a chance to hoist his drafts unhampered. This leaves 180 feet for the shed which would be an enormous and expensive structure if the present style were followed. Suppose the pier to be 700 feet long, the shed 680 feet. The shedded area would then be

ing, as it too often does, in congestion, delays, interference with loading and discharging, breakage, damage and theft. The truckman suffers from these same ills.

Suppose an uncovered driveway 50 feet wide is left down the center of the pier as shown in Fig. 1, with sheds on both sides and the pier deck sloped up gradually from the string piece to form a high level platform along these driveways on both sides. Then let the trucks back up to this platform to load or discharge and keep them off the cargo space entirely. Railroad tracks could be laid in the driveway along this platform so that cars could be conveniently placed for loading, a better location for them than along the string piece, where the shifting of cars interferes with all other operations.

The shedded area would thus be re-

With the constant increase in the size of loads carried by motor trucks, present piers are being severely strained to carry the loads put upon them. Designed as most of them are, for a uniform load of not more than 500 pounds per square foot, they are being called upon to sustain moving loads of 15 and 20 tons on four wheels. The factor of safety in the design is surely doing its bit and more. If trucks and cars could be restricted to a comparatively small portion of the structure, this portion could be designed to take these heavy moving loads thus reducing the amount of expensive construction required.

Unobstructed use of the shedded space would afford better opportunity for the operation of mechanical devices for handling cargo. With due allowance for the difficulties involved in devising mechanical equipment for handling general



cargo and with the firm conviction that no conveying system or the like will ever effect a radical change in present methods of handling such cargo, we look for a more general use of tractors and trailers, portable cranes and similar labor saving devices such as are now being introduced by far-sighted steamship men and stevedores.

Whether such a shed should be one or two stories high would depend upon local conditions. Present experience with 2-story sheds in New York harbor does not seem to justify their construction except in isolated cases. A contributing reason is undoubtedly the fact that the use of the upper deck means handling

hurts, and is therefore a factor.

The labor to truck cargo this distance and out on to the bed of the truck compared with that necessary to lift this same cargo from deck level to the truck bed and drag it the length of the truck should justify no increase in loading charges on deliveries. If this same space is kept available for receiving cargo from trucks, the truckman should be able to deposit his freight on the pier with little, if any, more effort than he expends now for the same results.

At the shore end of the shed on each side of the pier an entrance door could be provided so that trucks could be brought up on the platform if required

which is believed worthy of consideration. Placing the shed columns some distance inside the shed, with continuous doors carried on the cantilevered ends of the roof trusses, would leave the working space adjacent to the string-piece entirely unobstructed and would also effect some saving of material.

The width of the apron between the stringpiece and the shed has been grudgingly increased in the last decade. The principal reason for the reluctance to increase this width has been the desire to retain all possible space inside the shed. One cargo of lumber will demonstrate the advisability of widening this area. Less interference with

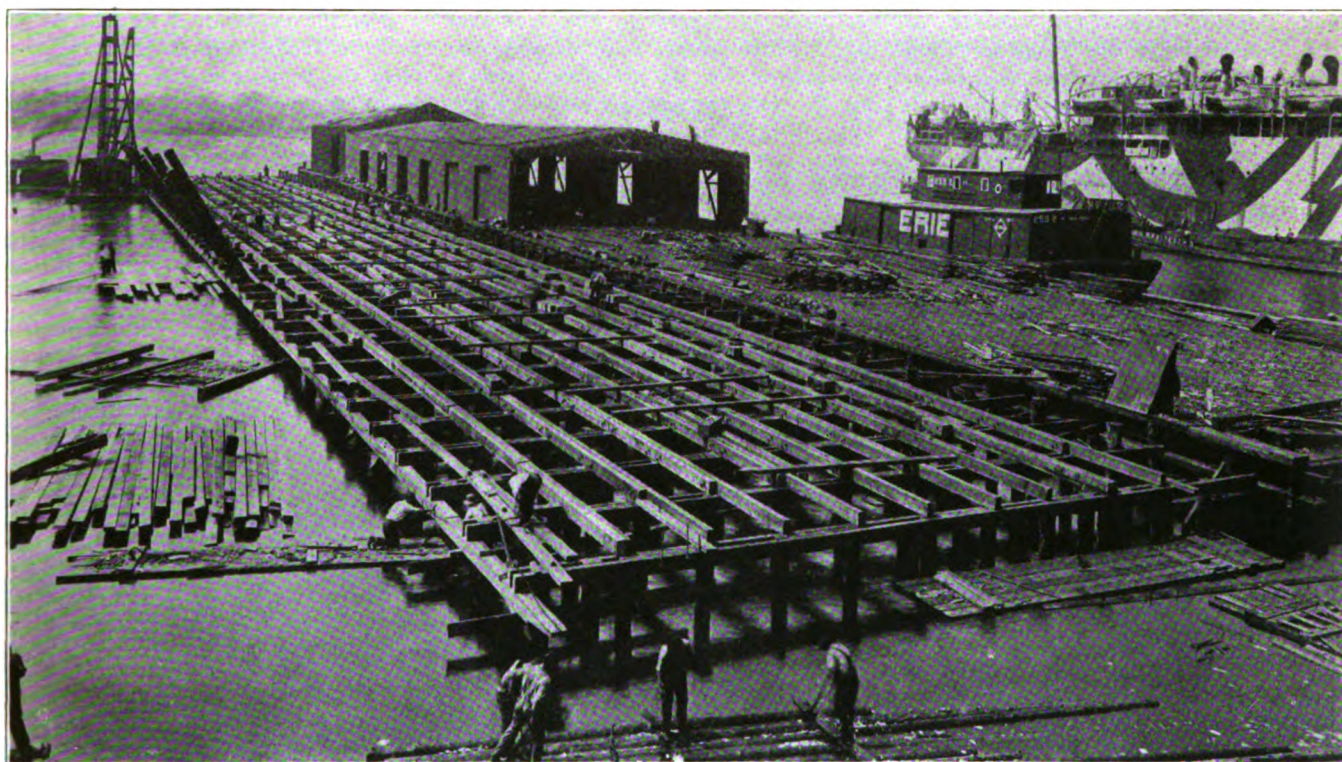


FIG. 5—THE OLD AND THE NEW

A typical old shed of timber construction being demolished to make way for New York Dock Co.'s new pier No. 30. The southerly half of the new pier, 150 feet wide, was under construction while demolition of the old pier was in progress. The old pier was only 75 feet in width.

just so many more trucks on the lower deck with consequent increase in congestion and other ills. The central driveway between sheds with deliveries to trucks there offers better opportunity for economical use of a second story especially for inbound cargo.

The Senegambian in the wood pile is, of course, quite easily seen. Who will pay for the extra handling of cargo from truck to pile and *vice versa*? It is probably useless to reiterate the previously noted savings such as reduced carrying charges or lower rentals, more efficient and economical handling, less damages and thefts, lower insurance premiums and the like. A reduction in such charges is quickly discounted and forgotten but paying out additional hard cash always

in special cases. Truck deliveries could be examined and checked at the driveway entrance as they are now at the pier shed entrance so that this safeguard would not be sacrificed.

It is quite probable that the amount of cargo moved by railroad cars and motor trucks compared with other agencies, will continue to increase. The value of tracks on the piers will increase accordingly. Waterfront property with rail connections available, will be in demand. Better dispatch of trucks will also be essential.

The arrangement suggested should help to meet these conditions. That its adoption would require some changes in present customs is inevitable.

In Fig. 2 is illustrated another idea

cargo handling is the greatest benefit derived. Others of importance are the elimination of damage to shed and doors and the decrease in the height of shed.

The pre-eminence of New York as a port requires that it lead in developing better handling facilities. While developments in the port, contemplated or in progress, have been designed in accordance with the most modern ideas and for locations where unlimited space is available, the greater part of the steamship business will be handled for many years in the areas first developed and still most conveniently situated. The reputation of the port requires that facilities in these areas be modernized and that new areas be developed.



# How Rotor Ship Gets Power

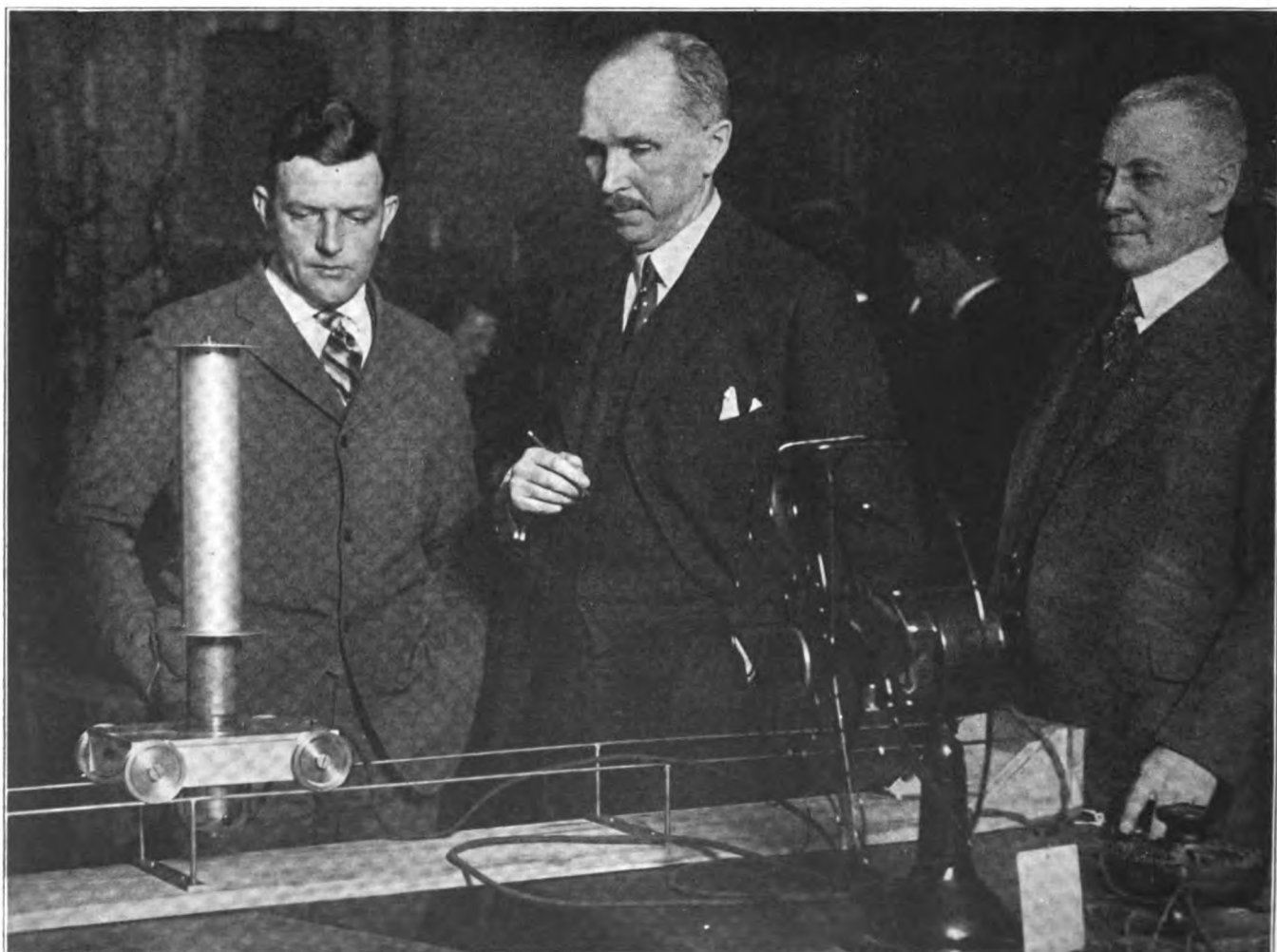
Power for the Rotor Ship Depends Upon Wind as Well as Revolving Cylinders—Model Proves Principle To Be Correct

OF ALL recent inventions in the marine field none it is safe to say has created more universal interest and curiosity than the Flettner rotor ship. The possibility, based on the reported successful experiments on a full sized ship, of the return to the use of wind power once more for the propulsion of vessels, has deeply stirred the imagination of the general public as well as marine engineers and shipping men. On account of this deep interest the Propeller Club of New York an informal association composed of men engaged in the marine industry, at its regular luncheon meeting on Feb. 5 in New York, invited one of its members, Prof. F. O. Willhofft, of the Th. Goldschmidt Corp., New York, to address the club members and their guests on the rotor ship a subject on which he is particularly well informed. He said in substance.

Flettner's rotor ship has created interest not only in engineering circles but among the general public because people were lead to believe that some hitherto unknown force had been discovered. Lack of authentic information added to the mystery. Since the facts have become known, people have gone to the other extreme and tried to minimize the importance of the invention. The principle misconception has been in regard to the fact that the Flettner rotor ship depends on wind power for its propulsion and is just as helpless as any sailing ship when there is no wind, having in that case to depend on an auxiliary engine and propeller. The Flettner ship is the result of evolution quite the same as any other important invention. The scientific study of flow laws for instance in connection with the airplane lead to radical improvements in de-

sign of hulls of vessels and of ship propellers, as well as to aerial propellers and it has brought about the invention of the contra-propeller and radical improvements in steam and water turbines, turbo pumps and compressors.

Professor Magnus, a physicist, after whom the so-called Magnus effect was named, did not actually discover this effect but rather was the first to give a scientific explanation for it. At that time, in 1852, the problem was to explain the peculiar action of a projectile spinning about its longitudinal axis when exposed to a lateral wind. The same effect is known to every tennis and baseball player. In 1919 the well known Professor Foettinger made use of the Magnus effect in the construction of a ship propeller which in place of blades had rotating cylinders. The experiments were discontinued, how-



WITH THIS MODEL THE PRINCIPLE OF THE ROTOR SHIP WAS CLEARLY DEMONSTRATED—PROFESSOR WILHOFFT IS STANDING SECOND FROM LEFT



ever, due to lack of means to carry them out on a large scale. In this connection it is interesting to note that in England as the result of news about the Flettner ship, experiments are being made for using horizontal rotating cylinders on airplanes which, if successful, will solve the problem of the helicopter.

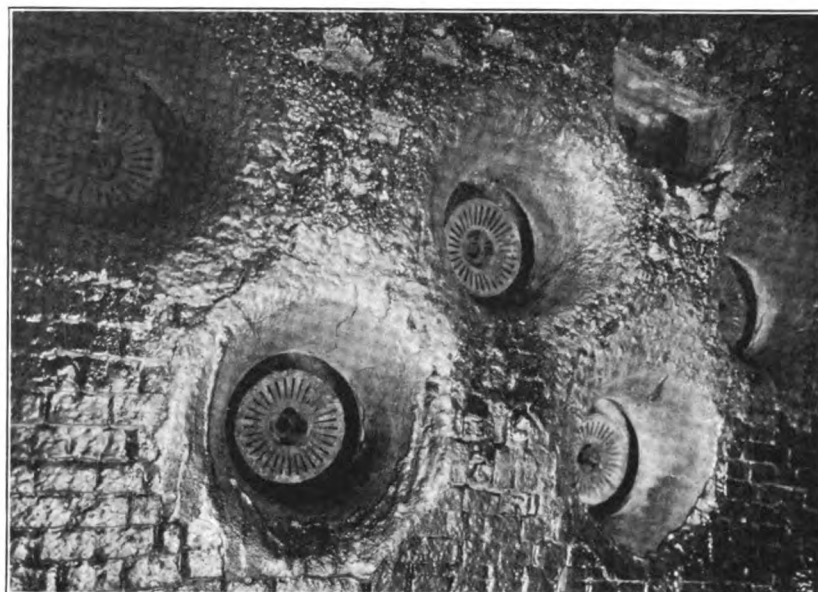
Flettner first set out to improve the sail of the ordinary sailing ship which in its essential features had never been improved since the earliest days of navigation. Flettner found it to be extremely inefficient as compared with an airplane wing, and experimented with metal sails having the shape of airplane wings, steered by small flaps

tating cylinder when subjected to a current of air will have a pressure area on one side and a suction area on the other with the result that a pressure is exerted on the cylinder approximately at a right angles to the direction of the wind. An interesting feature of this phenomenon is that while in every other mechanical device friction is minimized as far as possible, the Flettner rotors depend on friction for working, that is on the friction of moving strata of air against each other and against the smooth surface of the rotor cylinder. The BUCKAU was originally a motor sailing ship, a square rigged schooner of 600 tons displacement. The rotor shells are made of

how the Magnus effect was demonstrated by means of an electric fan and a small rotor cylinder mounted on wheels and revolved by a small electric motor. A series of slides were shown giving polar diagrams of metal sails as well as rotating cylinders with and without end plates, the latter playing a very important part since they prevent the leakage of outside air into the pressure and suction area. Other diagrams obtained from actual experiments were shown to demonstrate how the increase of the speed of the rotor surface as compared with the wind velocity, will affect the resulting driving force. Also how at a certain velocity the pressure on the cylinders

## How Leviathan's Furnaces Look from Inside

This illustration shows with remarkable clearness the inside face of the burner wall of one of the oil burning furnaces of the S. S. Leviathan. The intense heat may be judged by the way the fire brick wall has fluxed and run down into the monolithic refractory of which the burner ring cones are made. Subjected to the same heat as the fire brick the refractory material seems to stand up very well.



much the same as the well known Flettner rudder. He actually obtained an increase of propelling force of about 50 to 60 per cent but discarded the ideas on account of impracticability in heavy seas and high winds. In his endeavor to find other means of directing the wind in the most efficient manner, he finally conceived the idea of using rotating cylinders which at that time were being tested out in the wind tunnel at the University of Goettingen, Germany. When the tests showed unexpectedly large forces, Flettner at once developed the idea further and with the assistance of a large shipping company, had the rotor sailing ship BUCKAU equipped with two rotating cylinders. The appearance of the BUCKAU is well known to the American public from the illustrations published everywhere. A ro-

steel 3/64 of an inch thick, stiffened by longitudinal and cross braces. They rotate on two stationary pivots which reach to about two-thirds of their height. The upper bearing has to carry the weight of the shell and at the same time must take care of the lateral pressure. The cylinders have a diameter of 9 feet 3 inches and are 52 feet high, corresponding to a total projected area for the two cylinders of 874 square feet, or not quite one tenth of the former sail area of the BUCKAU. Electric power is furnished by a small two cylinder 45 brake horsepower diesel engine. The rotors are revolved by two 11 kilowatts 15 horsepower reversible direct current motors, running at 750 revolutions per minute and are geared to the rotors in the ratio of six to one.

The accompanying illustration shows

does not continue to increase which is of great importance in stormy weather. Other diagrams were shown to bring out the efficiency of sails as compared with rotating cylinders and how the pressure is distributed on the circumference of the cylinders.

At the present the BUCKAU represents the first practical application of the invention and the results obtained so far certainly encourage the belief that this new method of ship propulsion is bound to lead to very interesting results. Just how far these will go, no one can predict at the present moment. If further experience with this type of ship confirm the expectations based on the first trips of the BUCKAU, it will not exactly mean the coming back of the sailing ship, but rather the solution of the problem of the auxiliary sailing ship.



# More American Ships

On the High Seas Due to Energy  
of Private Owners—Few Sales

**I**DLE steam shipping in the ports of the world declined over 900,000 gross tons during 1924, according to the transportation division of the department of commerce. Most of the decrease in unemployed steamers occurred in the first half of the year, only 147,000 gross tons of such vessels finding employment in the last half. American idle tonnage showed a small decline in both halves of 1924.

While the oversea trade of the world was causing additional ships to be brought into active employment, trip charter rates did not respond. The surplus of tonnage over trade requirements is still too large for an increase in the volume of trade to result in rising rates. The index number of six tramp ship commodities over 12 world trade routes (maintained by the Transportation Division) indicates that trip charter rates in the third and fourth quarters of 1924 were only 102 per cent of the average for 1911-1913.

## Shipbuilding Increases

Merchant shipping constructed in the world during 1924 totaled 2,248,000 gross tons, an increase of 605,000 tons over 1923. The increased output of British yards during 1924 was 794,000 tons, a result attributed to disastrous strikes in 1923 and a comparative absence of them in 1924. The relation between construction output and production costs and sales prices remains about the same as indicated for the end of June.

Tonnage under construction at the end of 1924 was slightly larger than at the beginning of the year, aggregating 2,470,000 gross tons as compared with 2,444,000 tons. The significant change in shipbuilding during the year was the great increase in motor ship tonnage—from 634,000 tons on Dec. 31, 1923 to 924,000 tons on Dec. 31, 1924, or from 26 per cent to 37 per cent of the total. That shipbuilding did not improve materially however is shown by the fact that 547,000 gross tons were launched in the fourth quarter of 1924, whereas work was started on only 485,000 tons. In the same period of 1923 launchings totaled 332,000 tons, and work was started on 473,000 tons.

Few sales of vessels between 5000 and 10,000 deadweight tons and not over five years old were made in the last half of 1924. Three such vessels brought an average of \$38 a ton, as compared with \$27 for eight vessels in the first half of the year. These prices are not to be taken as conclusive, since in such a small

number unusual factors in one or two sales throw the average out of line.

Complete information on the volume of the world's seaboard trade is lacking, owing to the fact that some leading nations do not publish their foreign trade statistics in terms of weight and others do not differentiate their landborne from their seaborne foreign trade. From returns available, however, it can be said that French and British trade was larger in volume than in 1923, whereas the trade of the United States was smaller. It is evident that world trade as a whole must have increased in volume, since the number of steamers idle at the beginning of 1924 had decreased by over 900,000 tons by the close of the year.

American vessels engaged in foreign trade cleared from United States customs districts led foreign ships in net tonnage gains during 1924 by registering an increase of 2,101,000 net tons against a gain of only 98,000 tons by vessels under alien registry, according to a compilation by the department of commerce.

Total vessels so engaged of 68,823,000 net tons were cleared from all customs districts during 1924 compared with a total tonnage of 66,624,000 in 1923, an increase of 2,199,000 net tons. American ships of 30,033,000 tons were cleared during the year against 38,790,000 tons of foreign vessels.

## U. S. Has Large Export Trade

Merchandise valued at \$4,590,146,873 was sold to countries of the world by the United States during the 12 months. Europe remained our best customer, taking goods valued at \$2,444,490,079. Exports to North America were valued at \$1,089,187,565; South American purchases amounted to \$315,064,923; Asia, \$514,605,131; Oceania, \$156,504,866; Africa, \$70,294,309.

New York customs district maintained first position in port activity, clearing 19,243,000 tons of which 6,425,000 were American and 12,818,000 foreign. Washington ports were the second most active, clearing 5,150,000 tons. New Orleans was third with 4,921,000 tons followed by Ohio, Galveston, Virginia, Rochester, Massachusetts, Los Angeles, Michigan, Philadelphia, San Francisco, Florida, Duluth, Maryland, Sabine, and Buffalo.

Los Angeles registered the largest tonnage gain of any United States customs district for the year, increasing from a total tonnage of 1,780,000 in 1923 to 2,320,000 in 1924.

Florida surpassed all other customs

districts in percentage of foreign shipping under the American flag. American vessels accounted for 1,631,000 tons of a total tonnage of 1,992,000 cleared from that district during the year.

## Marine Show Plans

**T**HE American Marine show to be held Nov. 9 to 14, 1925 at the Two Hundred and Twelve Anti-Air Craft Regiment armory, Sixty-second street and Columbus avenue, New York City, will offer excellent facilities for exhibiting all types of ship propulsion and auxiliary machinery. A door at street level nine feet high on the side and ten feet six inches high in the middle and a clear width of 9 feet 4 inches communicates with the floor of the armory. Therefore trucks may be driven through this receiving door directly to the exhibitor's booth. This will materially reduce the hazards of exhibiting and make it possible to show the most expensive and delicate apparatus without fear of damage.

Since they will all be on one floor, the exhibits of every one can readily be seen by visitors to the armory. It is anticipated that the greatest interest will be shown by all men in the marine industry to see what developments have been made in the two years that will have passed since the last show. This show therefore represents an exceptional opportunity to bring to the attention of naval architects, marine engineers, marine superintendents and steamship owners and operators new and improved equipment and machinery for marine use.

## Uncle Sam Wants Hull Inspectors

**T**HE United States civil service commission will hold a competitive examination to fill vacancies in the steamboat inspection service for local and assistant inspectors of hulls at salaries ranging from \$2700 to \$3000 a year. This examination is for filling positions only in class 2 ports of the Great Lakes, and class 3 ports on central western rivers.

For the position of local and assistant inspector of hulls for these ports, applicants must have had at least three and two years' respectively, of practical experience under United States license as master or pilot of inspected vessels of American registry.

Full information and application blanks may be obtained from the United States Civil Service commission, Washington, or the secretary of the board of United States civil-service examiners at the post office or customhouse in any city. Receipt of applications will close March 28.



# Another World's Record Broken

Over Half a Million Tons of Freight Carried—Forty-Six Cargoes of Ore and Coal Delivered in Seven Months and Seventeen Days—Record Made by a New Vessel Completed in April, 1924

NOWHERE else in the world, it is safe to say, has the business of transporting bulk cargoes been developed to such a remarkable degree of efficiency as on the Great Lakes. Considering their draft, very large ships have been built of a design to permit rapid handling of cargo. Every detail of dock equipment has been modernized with the view of reducing the time for loading and unloading. The loading time for these large vessels carrying around 13,000 tons is reckoned not in days nor hours but minutes. A cargo of ore of this tonnage has been loaded in 30 minutes. Under these conditions of exceptionally quick turn around applying more or less to all vessels it means unusual efficiency on the part of the management and the officers and men and in the mechanical features of the ship itself for one of them to set a new high record for the total amount of cargo carried during the season. This honor was won by the steamer WILLIAM K. FIELD, owned and operated by Reiss Steamship Co., Cleveland, commanded by Capt. Alex Craigie and A. L. McLaren, chief engineer, during the season of 1924. In a period of seven months and 17 days she delivered a total of 552,014 net tons of ore and coal. This is a new high record never before equaled on the Great Lakes or ocean.

The WILLIAM K. FIELD is a new vessel built by the Toledo Shipbuilding Co., Toledo, and completed in the spring of 1924. In design as may be noted from the accompanying illustration, she follows the standard lake bulk cargo carrier type, which is now practically a standard. Her dimensions are 600 feet in length, 60 feet in beam and 32 feet in depth and she has a gross tonnage of 8200 and a deadweight tonnage of 13,000. She has a reciprocating engine of 2500 horsepower, scotch boilers, burns coal and has a speed of 12 miles per hour.

Beginning the season at Toledo where she had just been completed, on April 19, 1924, she delivered between that date and December 6, 1924 when she discharged her last cargo at Duluth a total of 46 cargoes, 22 of 267,339 net tons of which were ore and 24 of 284,675 net tons of which were coal making a grand total of 552,014 tons. The

runs were almost invariably from Ashtabula to Duluth with coal, and from Allouez, Wis., back to Ashtabula with ore, though one trip was made from Ashtabula to Sheboygan, Wis., and one from Lorrain to Green Basin, Wis., with coal. So practically all the cargoes



CAPTAIN ALEX CRAIGIE  
Commander of the Steamer William K. Field

were to and from Lake Superior, and 529,666 tons of ore and coal were carried through the Soo river. Lake Michigan ports received only 22,348 tons. Cargoes were taken both ways on every trip until the last when she went in ballast from Green Bay, Wis. to Lake Erie for coal. Good dispatch was given and the stay in port was reduced to a minimum. The average

draft for the entire season was 19 feet. After delivering her last cargo at Duluth Dec. 6, she proceeded to Fort William to load grain for spring delivery to Buffalo.

Other previous high records for freight carried were made by the steamer COL. J. M. SCHOOMAKER of the Shenango Furnace Co., in moving 464,725 net tons in the season of 1916 and by the steamer JAMES MACNAUGHTON of the Wilson Transit Co., in delivering 491,725 net tons in the season of 1923. The Field should get off for a good start in 1925 as her present charter calls for holding a cargo of grain at the Canadian head of the Lakes for spring delivery at seven cents a bushel. She has a capacity for more than 400,000 bushels.

The captain, chief engineer and crew of this vessel deserve a great deal of credit for the splendid record made during the last season, and it is predicted that it will take an especially well drilled and disciplined outfit to equal it.

The steamer WILLIAM K. FIELD has deservedly earned the title of champion freight carrier of the world. In the navy the battleship making the best official record in marksmanship is allowed to fly a pennant denoting this fact. In big league baseball the champion team always flies a flag indicating its pre-eminence. Why shouldn't the FIELD fly a pennant or carry some other mark of distinction to signify to all her friendly competitors that she holds the record. And as in the navy and in baseball this emblem of honors earned should be passed on to the one who can win it.



STEAMER WILLIAM K. FIELD BREAKS ALL RECORDS FOR FREIGHT CARRIED



# What the British Are Doing

## Short Surveys of Important Activities in Maritime Centers of Island Empire

**A** NEW departure in Atlantic travel has been inaugurated by the Cunard line in issuing special tourist third class round trip tickets for £41 4s 6d for holiday tours in Canada and the United States from the British Isles. Several of the newest Cunarders sailing from Southampton and Liverpool will specially reserve all the third class accommodations for this traffic. The movement is a sequel to a series of tours made last year by American and Canadian tourists, mostly professors and students. It will be possible to complete the tour in three weeks. Visits may be made to Quebec and Montreal, the Canadian Lakes, Niagara Falls, Boston and New York. Those returning from New York will be able to sail by the MAURETANIA which still retains its title of the world's fastest liner. It is well known that the third class accommodations are now better than the former second class.

**SIR FREDERICK HENDERSON**, ex-president of the Shipbuilding Employers federation writes in *Lloyds List Annual Review*: "Both employers and workers in shipyards have still a lean time ahead. The inelasticity of the trade union mentality seems to make it difficult to adjust wages and conditions so that the employer can effect any real economy by installing new tools and machinery, even though that economy could be effected without the men's actual earnings suffering. A glaring instance is that of pneumatic tools, which many shipyards have had to give up, as they were adding to the costs instead of lessening them, and yet they should be instruments to minimize costs greatly in this country, as they do on the continent."

**F**REQUENT complaints of Dutch labor supplanting English labor on ship repairs has led to the collection of statistics which shows that the English wage standard, low as it is, is still easily the highest in Europe, while the normal working week of 48 hours in Holland is increased to 52 and even 60 or 70 hours. Overtime is paid on a basis as much as 70 per cent and 90 per cent lower than in Great Britain. F. Smith, secretary of the Shipbuilding and Trades federation complains that competition is assisted by the fact that English

steel firms constantly quote £1 lower per ton for their steel to Continental firms than to the home manufacturer. The official states that they are investigating to what extent the Dutch undercutting is attributable to longer working hours and lower wages.

**T**HE monthly report of the Boiler-makers' society states that 22,063 members were unemployed at the end of December compared with 26,072 at the end of November. The general secretary maintains that the shipbuilding industry can provide reserves by the equalization of profits, and should provide reserves for the equalization of wages. Shipbuilding requires such a scheme and ways and means should be considered to that end.

**E**NCOURAGING features are difficult to find in the British shipbuilding industry. But one of these is the reduction of idle tonnage in United Kingdom ports from 755,000 last year to 333,000 at the end of December. Reports of shipping companies are generally dismal, but the Tyne-Tees Shipping

Co. is an exception holding its fully paid shares at a premium of 20 per cent. It has now issued new shares at par in the proportion of one share for every two held. In spite of the depression it has maintained profits at a dividend-paying level.

**T**HE Manchester Shipping Canal Co. has accepted a tender for the construction at a cost of £300,000 of new transit sheds at Trafford Wharf. The work will be done by a local firm, B. Morton & Co. Ltd. and will consist of two buildings of concrete, 450 feet long and 110 feet wide.

**S**UBMARINE XI, of an entirely new type has been built at the British naval yard at Chatham in secret, and is described as the largest and fastest submarine in the world. With its speed of 32 knots, this vessel can keep up with the battle fleet steaming at full speed. The object is to operate it as a commerce raider, as it has the speed of a torpedo boat destroyer and a crew of 100 men. This submarine will be the first to have a canteen on board.

## From the Editor's Mail

Editor, MARINE REVIEW:

I have read with particular interest the fine article in the February issue of MARINE REVIEW by our fellow citizen Harvey Goulder on the question of the maintenance of lake levels. His argument is unanswerable.

As you know, I have been rather active in seeking to prevent further lowering of lake levels by improper diversion of water through the Chicago Drainage Canal.

I agree with your general view that the shipping business, as other business, should be in private hands. The difficulty about the matter is that following that policy we seem not to have been able to get anywhere. American foreign shipping has languished for a long time, and our country has gone on paying a tribute to foreign

nations for carrying our commerce. Sometimes I have become discouraged on the merchant marine question, and have felt that the American people really did not care whether they had a merchant marine or not.

I, of course, realize the economic unsoundness of maintaining a fleet of carriers at public expense, and yet, it seems to be a terrible step to take to scrap the great fleet of fine ships now owned by the United States government and admit that they do not have capacity or desire to maintain a merchant marine. What practical method would you suggest of disposing of the fleet which the Government now owns? I shall be interested to read your articles from time to time.

Frank B. Willis,  
Senator from Ohio  
Washington, D. C.



# Steel Companies Ship By River

Savings Can Be Effected Over All-Rail Routes But Unloading Facilities Need Improvement—Twenty-four Million Tons Moved on Monongahela

BY W. H. LLOYD

**O**HIO valley iron and steel shippers from Pittsburgh to Cincinnati, awakened to the vast potentialities for savings embraced in barge transportation via the Ohio and Mississippi rivers, are plunging wholeheartedly into the venture.

Having passed through the experimental stage successfully, they quietly are executing plans for an extensive river campaign in 1925. Not only iron and steel but also coal and coke are being moved in great volume, vastly greater than in even the former palmy days of river transportation. Up river movements of fuel are growing.

The Carnegie Steel Co. recently completed loading 12 barges of manufactured steel which will be started on their journey south with the first rise in the Ohio river. This shipment comprises 12,200 tons. The steamer WILLIAM G. CLYDE will tow the barges.

River transportation around Pittsburgh and its obvious advantages to such important iron and steel manufacturing concerns as the Carnegie Steel Co., the Jones & Laughlin Steel Co., and the Pittsburgh Steel Co. has been encouraged by the federal government by liberal expenditures until today it is a feature of the Pittsburgh trade. The vast Jones & Laughlin works at Aliquippa evidently were designed to use the river extensively. The great Clairton by-product coke plant of the United States Steel Corp. gets its coal from the Connellsville regions. It is being doubled in size. Capt. J. F. Tinney, of Pittsburgh, told a recent meeting of the Mississippi Valley association at Evansville, Ind., that in a single year 24,000,000 tons of freight were carried on the Monongahela river at an average of 38 cents a ton. This compares with \$1.18 a ton by the railroads, showing a saving of \$21,000,000 in

freight rates on a comparatively short stretch of river.

With similar data in mind, Pittsburgh manufacturers have steadily moved to take advantage of their waterways. The Carnegie Steel Co. has built and put into operation a score of steel barges with tow boats. The Jones & Laughlin company and the Pittsburgh Steel Co. also are adding to their barge facilities, carrying cargoes of bars, plates, shapes and wire products. Down the river a like expansion is being accomplished by the Wheeling Steel Corp. The latter is bringing coal to its works at Wheeling and Steubenville from its West Virginia mines by way of a barge line on the Ohio river.

## Big Saving in Freight Costs

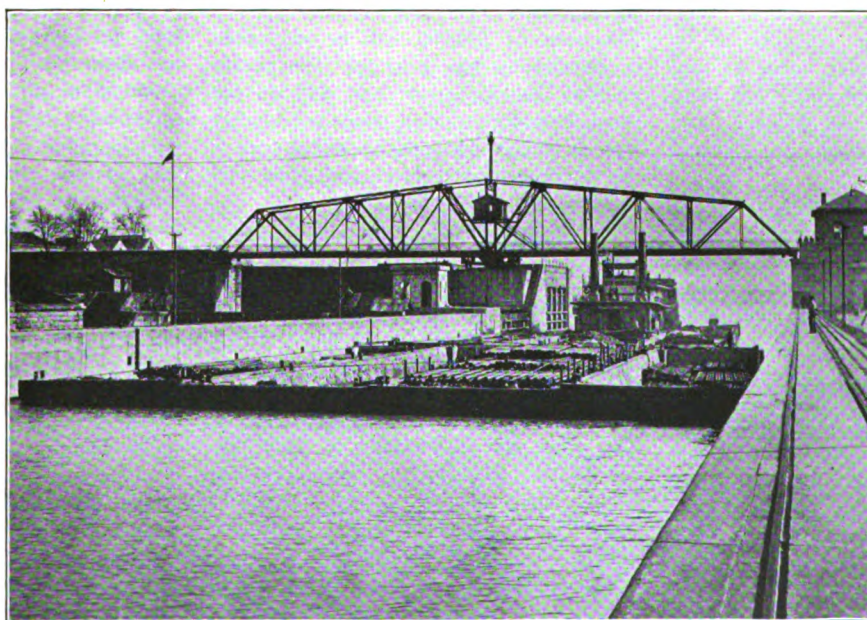
Wrought pipe makers in the Pittsburgh district have figured they will be able to save about \$2 a ton on pipe shipped down the Ohio and Mississippi rivers in barges to Memphis where it is transferred to railroad cars and thus distributed through the oil fields in the Southwest. However, it is pointed out that with meager unloading facilities at certain down-the-river points, this margin of saving can be made only through careful operation. The Jones & Laughlin company is expending a considerable sum in providing better handling and warehouse facilities at Memphis.

Another Pittsburgh concern is figuring upon getting even to St. Louis with its products, thus saving considerable in tonnage freight to the farther western customers. But it further figures it will save much time in deliveries to these customers in comparison with all-rail shipments made out of the Chicago district.

The Inland Waterways Co. was organized in Pittsburgh about a year ago to engage in all-water freight business. The elimination of "Pittsburgh plus" has given considerably more point to this organization, it is now believed. The Inland company has just filed jointly with the Louisville & Nashville railroad a through tariff via river transportation to Louisville via river, and from Louisville to Memphis via the railroad. It is expected other railroads such as the Illinois Central and Southern railroad will concur in the proposed rates. The first shipment under this new tariff is expected to carry several bargeloads of products from the Pittsburgh Steel Co., and other Pittsburgh manufacturers are expected to take advantage of the line's obvious advantages.

Filing of joint water and rail freight rates out of Pittsburgh ultimately for shipment of iron and steel products to Memphis seems likely to bring to a showdown much talk over the feasibility of shipping by river barges.

Pittsburgh thus would be all set for taking advantage of the river facilities right at her door. But what about the unloading facilities at the points of destination farther down the river? Can the cargo be unloaded in such a manner as to preserve the savings accumulated by the use of water transportation? That is the question now agitating Pittsburgh, Wheeling and other iron and steel shippers. The federal government has provided fine



STEAMER WILLIAM G. CLYDE OF CARNEGIE STEEL CO.'S LINE TAKING A TOW OF BARGES THROUGH THE OHIO RIVER LOCK AT LOUISVILLE, KY.



engineering talent and millions of money for improvement of the Ohio river, and also for the Mississippi river below St. Louis. A vast system of dams is being put into the Ohio river below Pittsburgh and is in partial use, so far as construction has been completed. Further improvements are said to be under way.

#### For Full 10 Months

These improvements, combined with the seasonal rises in the river due to spring and fall rains, are likely to enable Ohio river navigation for 10 months in the year. At least this is what the experts say. Shipments from Pittsburgh now reach Memphis on the proposed rail-water route via the river to Louisville and then on via the Louisville & Nashville railroad in 12 days. Via the all-river route, they require six to eight weeks. The water-rail shorter route can be maintained for the 10-month period it is believed.

The saving over the all-rail rate

by the proposed joint rail-water tariff will be about \$3.50 a ton, it is figured. However, this will mean an increase of \$2 a ton over the all-water rate from Pittsburgh to Memphis. However, the time saved in these water-rail shipments is believed a worthy offset to the slower but lower rate transportation all-water.

Yet as pointed out above, the fly in the ointment for the Pittsburgh and Wheeling shippers—although it does not seem ever to have deterred the competing Iron-ton, O., shippers—has been the question of the inadequate unloading facilities in town and cities down the river. Better docks will have to be built, or rather wharves, before unloading costs can be kept down in line with the lower water transportation costs. It appears easy to dissipate in a few hours unloading on a poor wharf and transferring to railroad cars for further shipment to the Southwest, some of the \$2 a ton savings planned through water rates.

However, river town authorities may be induced to take a hand in fixing up this matter. The Jones & Laughlin Steel Co. is spending some thousands of dollars in putting in unloading and warehousing facilities at Memphis to accommodate this river trade in the development of which it is taking a leading part.

#### Talks Sizes of Barges

Still another question involves the sizes of barges which can be made profitable in shipping iron and steel down the river. The Carnegie Steel Co. is employing barges carrying 1000 tons each. However, others are using barges carrying 500 up to 1000 tons each. The smaller barges are used in carrying less ambitious cargoes to the smaller towns and up the smaller branch streams which empty into the Ohio. These are details which now are engaging the attention of river authorities and transportation engineers, for proper adjustment.

## More Southern Waterway Development

**T**WO important steps toward opening up the lower Mississippi river and the Warrior river route out of the Birmingham Ala., iron, steel and coal district have just been taken. Adequate river transportation from Pittsburgh on the one hand, and from Birmingham on the other, both to this city and Mobile on the Gulf, is about to be provided.

The Carnegie Steel Co. has just extended an option on an 84-acre tract of land along the Mississippi river at Baton Rouge, La., a quarter mile below the ferry. The tract is to be covered with warehouses, wharves and handling machinery for unloading from river barges into ocean vessels, and vice versa; beside loading onto railroad cars at hand.

The Warrior river barge lines has just bought 36 steel barges and will place 24 more. Something like \$1,500,000 will be expended upon this water-carrying back door to the steel mills of Birmingham.

#### Barges Are Bought

Purchasing 36 steel barge from the Tennessee Coal, Iron & Railroad Co. and placing an order for 24 more, barges by the Federal Inland Waterways Corp. is announced at Birmingham. The barges bought were built by the American Bridge Co. and it is expected the orders for the additional 24 will be placed with the American company, for early spring delivery.

The Inland Waterways corporation is in charge of the barge service of the government on the Mississippi and Warrior rivers. It proposes to spend more than \$1,500,000 on the Warrior river service, this river extending from the Birmingham district to Mobile. The corporation paid \$732,655 for the 36 barges already delivered and will expend \$450,000 for the other 24.

Additionally the company will loan to the Port of Birmingham Co., \$250,000 to provide transportation between Birmingham and the Warrior river. The sum of \$20,000 will be expended in developing the port of Tuscaloosa on the Warrior river, and \$35,000 for reconstructing a self-propelled barge into a packet boat to be run between the Birmingham district and New Orleans.

#### Plans Big Terminal

The second highly important step taken with relation to southern waterways was the recording of an extension by 60 days of an option on a tract of 84 acres along the water front of Baton Rouge La., by the Carnegie Steel Co.. The tract has a frontage of 2000 feet along the Mississippi river. Several high officials of the Carnegie company from Pittsburgh and this city have concluded the option negotiations.

The Carnegie company proposes to install floating docks along the property, put in modern electric unloading and loading machinery, and build a

railroad spur behind the levee leading to the warehouses. With the establishment of this terminal, the Carnegie company proposes to enlarge its Ohio-Mississippi river service from Pittsburgh to the Gulf. Through the Isthmian Steamship Line, the ocean shipping arm of the United States Steel Corp., it plans to develop foreign trade along extensive lines. The river at the Baton Rouge point is 70 feet deep.

#### Would Ship Regularly

Present plans contemplate shipping steel products from Pittsburgh to Baton Rouge by river, thence transferring them to ocean vessels for export and returning the barges up the rivers with cargoes from abroad. As soon as the various dams now under construction on the lower Ohio river are finished, the Carnegie company plans to make several shipments each month down the rivers to southern ports. This will do away with the present irregular system of waiting until the river rises and provides sufficient water.

On Feb. 13 the company started from Pittsburgh the largest consignment of steel products it has yet made down the Ohio river. The shipment included 12 barges towed by the steamer WILLIAM G. CLYDE loaded with cotton ties, wire products and structural steel consigned to Evansville, Memphis, and New Orleans. This is the eighth large river shipment made to the South and



barges now are being loaded for the ninth trip to be started in a short time.

When the \$10,000,000 dock and harbor improvements now under way at Mobile, Ala., are completed there will come into being a port of immense importance not only to the South but also to vast portions of the Middle West. Located right on the Gulf of Mexico, served with important railroads, and being the outlet for the Warrior river development back in to northern Alabama, Mobile's future seems assured.

But of even more importance, Mobile then will have become the gateway for the shipment of iron, steel, coal, and cotton from many southern furnaces, mills mines and plantations to domestic as well as foreign consuming points. Her influence will be felt from the Atlantic to the Pacific coasts. And southern industry will have received a highly stimulating outlet.

When the estate of Alabama decided a couple of years ago to undertake the port development at Mobile, the best engineering, shipping and commercial talent of the state was enlisted. The state commission was headed for a time by George G. Crawford, president of the Tennessee Coal Iron & Railroad Co., and his services still are available to it. However, Gen. W. L. Sibert, who made an enviable record during the war, now is the chairman of the commission. It will be remembered that General Sibert a score of years ago was in charge of much government dam construction involved in Ohio river improvements.

#### Got Busy Last Fall

The commission under General Sibert got busy last autumn. Just a few days ago the report of the general for the year ending Dec. 31 last was made to Gov. W. W. Brandon, of Alabama, showing the resources for new port construction of \$1,070,214.65.

The proposals and plans of the engineers employed by the commission call for an ultimate expenditure of \$10,000,000. Proceedings have just been commenced in court to move the Mobile & Ohio railroad tracks from the proposed site of various docks. The work of moving the tracks of the Louisville & Nashville railroads will be pushed vigorously this year, according to General Sibert's plans. Proposals for new bridges in the locality have been submitted to the war department. Sibert's reports says:

"As soon as the plan of the bridges is approved, it is the intention of the commission to enter into contracts to build the piers. This work will probably consume four or five months. No

general contracts can be let covering the construction of the docks proper until the Louisville & Nashville railroad is moved, thus making the site available for such work."

General Sibert has been given authority to purchase a dredge boat to cost \$270,000 delivered at Mobile, and to exchange land of the commission with the Louisville & Nashville railroad for the location of piers. The battle in the courts with the Mobile & Ohio railroad, the latter not desiring to surrender land which the commissions claims is needed for further port improvement is expected to be a lively affair. It began recently.

Further Warrior river improvements including the assignment of steel barges



.. CAPTAIN ASA DAVISON  
Vice president Emergency Fleet Corporation

to the route are expected to take place right along. This water route affords the Birmingham iron and steel district its gateway to the ocean. The town of Birmingham on the Warrior river is only about a dozen miles from Birmingham and is connected with the steel center by the Ensley Southern railroad. Congress in its recently passed urgent deficiency bill has authorized the expenditure of \$3,000,000 on the Warrior river. Hence, if the Warrior river advocates can persuade the Tennessee Coal, Iron & Railroad Co., to allow its railroad, the Birmingham Southern to operate the Ensley Southern railroad now in the hands of a receiver it will then open up Birmingham's splendid industrial district to the Warrior route and thence down the river to Mobile.

Barges already have been operated down the Warrior river to New Or-

leans and into the Mississippi river, but recently this scheme was split and the Warrior now is going along more on its own. The Tennessee company has been using it for bringing in manganese iron ore from abroad, and has something like 22 steel barges operating on the route. Many thousand tons of products have already been moved to the sea over it.

When the Mobile port improvements have been completed, it is easy to see the Warrior river route into and out of Birmingham will have a most important bearing upon the trade of the South, the Southwest and the Pacific coast via the Panama canal.

#### Capt. Asa Davison Joins Fleet Corporation

Captain Asa Davison, recently resigned as marine superintendent of the United Fruit Co., will become vice president of the Emergency Fleet Corp. in charge of operations, succeeding in this position Joseph Sheedy who takes charge abroad for the corporation.

He shipped before the mast on his fifteenth birthday and was made master of a sailing ship when he was 21 years old. From sail he went to steam in command of the steamer FOXHALL of the United Fruit Co.

As the Fruit company added larger and more modern vessels to its passenger and banana fleet, Captain Davison progressed and when they came out he was given command of the famous Admiral steamers, the FARRAGUT, SCHLEY, DEWEY and SAMPSON, and closed his career afloat as commander of the CALAMARES, the flagship of the Fruit company's great white fleet.

On coming ashore he became assistant manager of the marine department and soon after he was appointed general manager. During a period of six years he had entire charge of the construction of the largest vessels of the Fruit company and their subsequent operation in service.

During the war Captain Davison operated fruit vessels that were under the control of the British admiralty. His activities kept him in constant touch with the British ministry of shipping in London, and the insight which he then obtained into British methods of shipping should be of the greatest value now in competing with them for a portion of the ocean trade.

Justin Griess, vice president of the McMyler-Interstate Co., Bedford, O., died Feb. 25, aged 51. He was one of the founders of the concern, which is widely known for building cranes and cargo handling equipment. An engineer of wide reputation his loss will be greatly felt.



# Late Decisions in Maritime Law

## Legal Tips for Shipowners and Officers

Specially Compiled for Marine Review

By Harry Bowne Skillman

Attorney at Law

**S**TEVEDORES, contracting with the agent of a steamship to unload and transport wool in their lighter, who failed to properly protect it from rain, were held to be negligent, in the case of *Metcalf v. Chiarello*, 294 *Federal Reporter* 29, in proceeding with the work without covers, or without making diligent effort to secure covers, when rain threatened, even if the agent failed to supply covers as he had agreed, and in failing to place the cargo on a covered pier where it would be protected, and they were bound to make contribution to the agent who was primarily liable.

\* \* \*

"It cannot be," said the court in the case of *Malgor, Gonzales & Co. v. Royal Insurance Co., Ltd.*, 294 *Federal Reporter* 63, "that, after a wreck, an insurer can take and keep for months, even years, an insurer's goods without being held liable therefore." The court further held that it should not be overlooked that each of the packages of goods involved constituted a single risk, "many of which were perishable, which would, or might, greatly limit the application of the particular average or partial loss exception or warranty in the policy."

\* \* \*

When a vessel contracted with a construction corporation for repairs, it assumed the obligation to keep all parts of the ship under its control reasonably safe for the employees of the said corporation, and it could not relieve itself of this duty by delegating it to the charterer. The charterer was not liable, for failure to clean the deck or remove oil and grease, it was decided in the case of *SPOKANE*, 294 *Federal Reporter* 242, to an employee of the construction corporation repairing the ship under the contract with the owner, the charter vesting in the charterer no possession or custody of the ship, with the rights and obligations incident to a demise of possession.

\* \* \*

Where a ship was turned over to a stevedore company, neither the ship nor her owner was liable for injuries to an employee of the stevedoring company, where the ship was properly constructed and equipped, though the ship's officers knew that the hatch into which the stevedoring company was loading coal was left uncovered, said employee having had full opportunity to see that the cover of the hatch was off.—*KONGOSAN MARU*, 292 *Federal Reporter* 801.

\* \* \*

A common carrier owes no duty to prospective passengers to examine them and ascertain whether they are free from disease before accepting them as passengers; nor does it owe any duty of care or treatment to passengers who be-

come ill, further than to furnish such aid and assistance as they may reasonably request of it; nor any duty to restrain passengers from leaving its vessel at the completion of the voyage because their health may be endangered thereby. If, however, declared the court in the case of *Churchill v. United Fruit Co.*, 294 *Federal Reporter* 400, it were apparent that a passenger was mentally incapable of taking care of himself, the carrier's duty would be greater.

\* \* \*

The rule that when vessels are approaching on crossing courses the one having the other on her own starboard side shall keep out of the way applies, though the burdened vessel had stopped her engines to await the passing of a tow across her course, it was held in the case of *Red Star Towing & Transportation Co. v. Director General of Railroads*, 292 *Federal Reporter* 854. It was held in the same case that one of two crossing vessels, required by the rules to keep out of the way of the other, was solely in fault for a collision, where the other vessel gave the proper crossing signals and, as required, kept her course and speed.

\* \* \*

It was said in the case of *RATHLIN HEAD*, 292 *Federal Reporter* 867, that it is well settled that wharfage dues, imposed either under the authority of state laws or municipal ordinances, are not to be considered as tonnage dues, or charges on foreign or interstate commerce, unless so excessive as to be a burden upon same. Also, that a maritime lien, enforceable by suit in rem, exists for wharfage, for the time during which the wharf was reserved for the use of the vessel and for part of the time in actual use.

\* \* \*

Damages for the death of a person caused by a maritime tort are not allowed under the general maritime law. Where a remedy has been afforded, it has rested solely upon express statutes.—*Bloom v. Furness-Withy & Co.*, 293 *Federal Reporter* 98. This was also held to be the law in the case of *O'Brien v. Luckenbach Steamship Co.*, 293 *Federal Reporter* 170, where the court said further that a right of action for wrongful death, given by the laws of a state, may be enforced in a court of admiralty where it arose on navigable waters within the territorial jurisdiction of the state.

\* \* \*

In the case of *ROLPH*, 293 *Federal Reporter* 269, it was held: (1) A vessel and her owners are liable to an indemnity for injuries received by seamen in con-

sequence of the unseaworthiness of the ship. (2) A seaman, refused by the master proper treatment and care for injuries received on board, is entitled to compensation in damages from the ship. (3) Unseaworthiness implies, not alone that the vessel be staunch and sound, but that she be properly manned, and the employment of a mate, known to be unfit, constitutes "unseaworthiness" as to the seamen under him. (4) A ship which employed a mate who was of great size and strength and notoriously brutal to seamen under him was liable for injuries to seamen inflicted by the mate.

\* \* \*

The loading by the charterer of a ship chartered to carry a specified cargo with a different cargo is a breach of the charter party, and raises an implied promise by him to pay at least as much as he would pay for the cargo specified in the charter party. It follows, it was decided in the case of *American Metal Transport Co. v. Rederiakties Dragor*, 293 *Federal Reporter* 817, that where a ship chartered for carriage of a cargo of nitrate of soda, of which she could carry her rating of 600 tons, was loaded by the charterer with general cargo, for which she had space for only 451 tons, the charterer was bound to pay at the charter rate per ton on 600 tons. It is well settled, the court declared, that the master of a vessel has not any authority to alter or vary the terms of the charter party.

\* \* \*

Where a ship has been libeled for collision a second time in a different district through collusion, for the purpose of enabling the owner to file a petition for limitation of liability in that district, it will not be permitted to have that effect, though the second libel may be meritorious, but for the purpose of determining jurisdiction of the limitation proceedings the first libel only will be considered.—*KATAHDIN*, 293 *Federal Reporter* 824.

\* \* \*

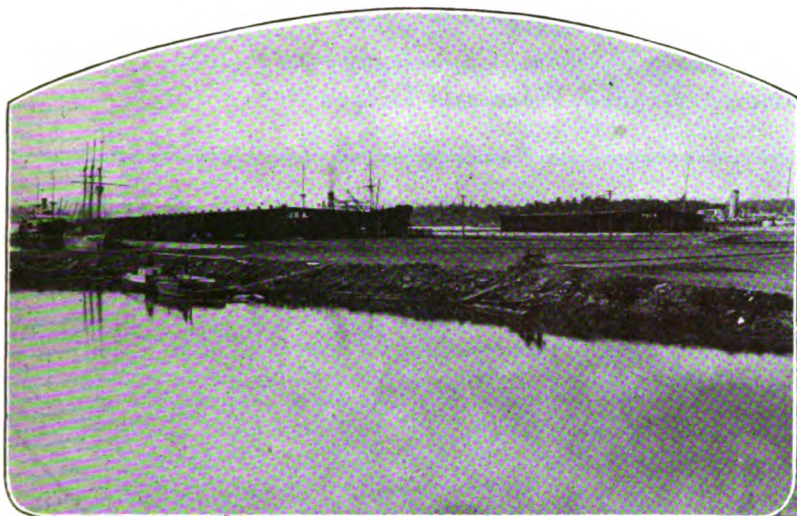
A towing company, which because its own tugs were engaged, hired others to tow a steamship to a berth, would be liable for damages to the ship caused by the orders of its tug master, though as to third parties the ship would be liable.—*W. S. HOLBROOK*, 294 *Federal Reporter* 908.

\* \* \*

An action for death of a laborer on navigable waters will not lie under act of congress June 5, 1920, section 33, as that act applies only to those signed as seamen on the ship's articles or engaged in navigation.—*Young v. Clyde Steamship Co.*, 294 *Federal Reporter* 549.

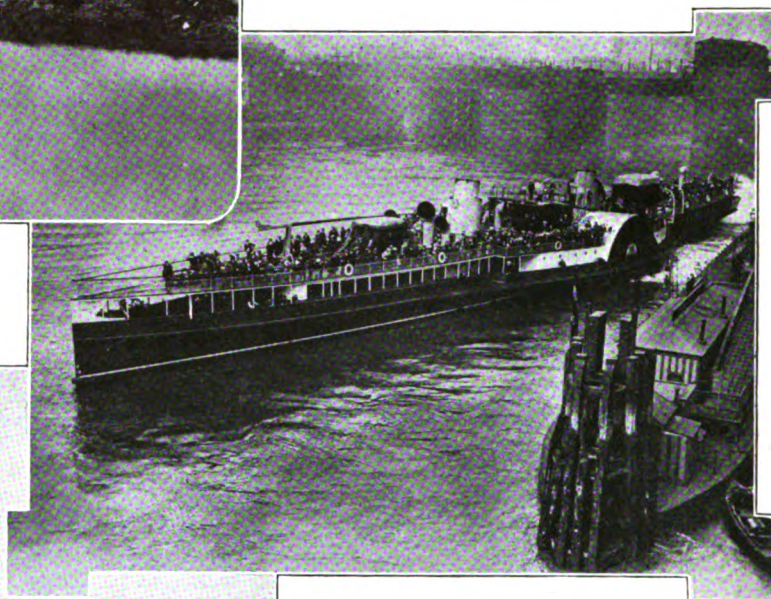


# Latest Marine News in Pictures

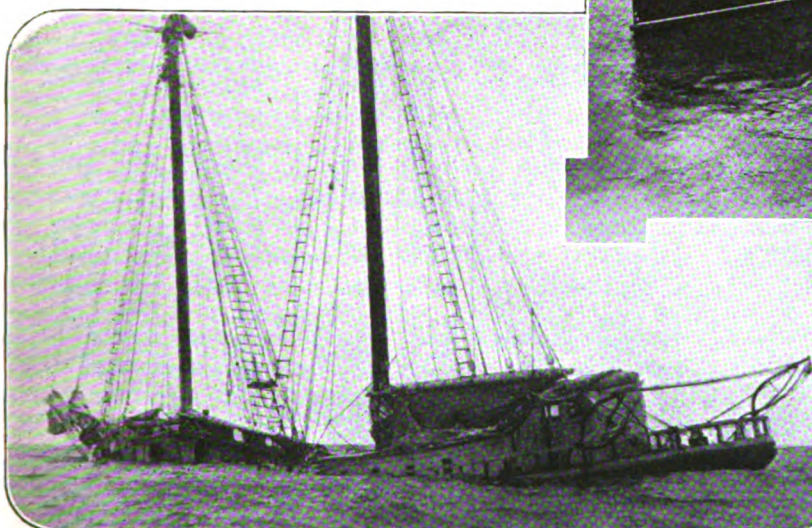


The Royal Sovereign, London's most famous vessel and oldest steamer line. In service for over 30 years on the Thames, carrying passengers to Margate and Ramsgate. She has telescoping funnels to permit passage under the bridges

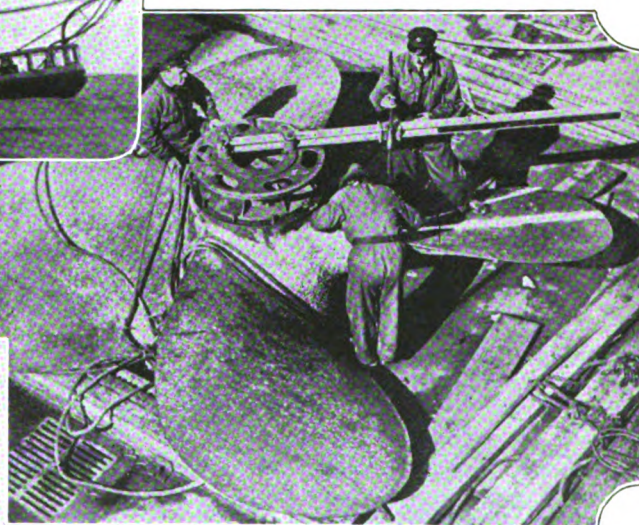
Dominion government ocean docks, Victoria, B. C. Grain elevators to be erected here by the Canadian Northern railway



Measuring the variation in pitch of one of the Leviathan's propellers in dry dock at Boston



Schooner Anna Sophia loaded with marble hard and fast on a reef off Milton Point, Rye, N. Y. The rising tide failed to float her and she is being gradually battered to pieces



Capt. George Frederickson of the tug Kaleen and Capt. Staples master of the ill-fated S. S. Mohawk, left to right, talking over the details of the rescue of 227 passengers and crew from the burning liner. Both men deserve high praise for their cool and courageous behavior and by their conduct, for averting a great disaster





# Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties—  
A Record of Collisions, Wrecks, Fires and Losses

| NAME                 | DATE    | CAUSE               | PLACE              | DAMAGE RESULTING           | NAME                     | DATE    | CAUSE              | PLACE                | DAMAGE RESULTING     |
|----------------------|---------|---------------------|--------------------|----------------------------|--------------------------|---------|--------------------|----------------------|----------------------|
| Anna Sophia          | Jan. 12 | Ashore              | Great Captains Is. | Floated                    | Katharina Dorothea       | Jan. 2  | Aground            | Skudenes             | Total wreck          |
| Artic Prince         | Jan. 1  | Disabled            | Caldy Roads        | Drag. anchor               | Kiang Wo                 | Jan. 8  | Ashore             | Off Hankow           | Floated              |
| Ariaga Mendi         | Jan. 18 | Disabled            | Shields            | To rud. and shaft          | Katherine                | Jan. 7  | Ashore             | Dundrum Bay          | Break. up            |
| Anthony O'Boyle      | Jan. 21 | Disabled            | Portland           | To windlass                | Kronstad                 | Feb. 4  | Disabled           | St. Michaels         | Prop. lost           |
| Adige                | Jan. 7  | Aground             | Buenos Ayres       | Floated                    | Lepanto                  | Jan. 12 | Disabled           | Hull                 | Leaking              |
| Anna Elise           | Jan. 8  | Collision           | Altona             | To bows                    | Lakewood                 | Jan. 7  | Collision          | North River          | Side stove in        |
| Adria                | Jan. 8  | Aground             | Brindisi           | Floated                    | La Bourdonnais           | Feb. 9  | Aground            | Red Hook             | Floated              |
| Apache               | Jan. 24 | Aground             | Danes Point        | Floated                    | Mountpark                | Jan. 10 | Collision          | Sagua                | Damaged              |
| Antietam             | Jan. 27 | Collision           | Perth Amboy        | Damaged                    | Malacca Maru             | Jan. 15 | Disabled           | Panama Canal         | To hull              |
| Arana                | Jan. 29 | Collision           | Perth Amboy        | Floated                    | Montcalm                 | Jan. 16 | Collision          | River Mersey         | Floated              |
| Anna Jensen          | Jan. 29 | Disabled            | Aberdeen           | To rudder                  | Manipur                  | Jan. 2  | Aground            | Coalhouse Point      | Floated              |
| Andora               | Jan. 27 | Ice floes           | Sydney             | To plates                  | Marena                   | Jan. 2  | Disabled           | Fishguard            | To st. pipe          |
| Aladdin              | Jan. 15 | Ashore              | Silden             | Floated                    | Midget                   | Jan. 2  | Not stated         | Southend Pier        | Sunk; re-floated     |
| Betty                | Jan. 14 | Ashore              | Kills              | Floated                    | Mohawk                   | Jan. 2  | Fire               | Brandywine light     | Total loss           |
| Britanica            | Jan. 1  | Aground             | Parana River       | Floated                    | Mandala                  | Jan. 2  | Disabled           | Middlesbrough        | To starboard         |
| British Lady         | Jan. 2  | Fouled              | Weymouth Bay       | To topmast and hngr.       | Munabro                  | Jan. 17 | Collision          | Boston               | To stem & bow        |
| Bidwell              | Jan. 19 | Disabled            | Marcus Hook        | To mach.                   | Morso                    | Jan. 16 | Collision          | Liverpool            | To rudder            |
| Buford               | Jan. 26 | Collision           | San Francisco Bay  | Sunk                       | Mexpet                   | Jan. 17 | Struck sub. object | Carteret             | Lost wheel           |
| Brothers             | Jan. 3  | Not stated          | Newcastle-on-Tyne  | Floated                    | Melrose Abbey            | Jan. 22 | Hev. weather       | Glasgow              | To cargo & bunkers   |
| Bournemouth          | Jan. 5  | Ashore              | Martin Garcia      | Sunk                       | Manatawny                | Jan. 7  | Collision          | Philadelphia         | To stem & plating    |
| Brash                | Jan. 6  | Collision           | Borcom Buoy        | Sunk                       | Newport                  | Dec. 31 | Fire               | New York             | Badly Dam.           |
| Bravik               | Jan. 8  | Disabled            | Hamburg            | To engines                 | Nital                    | Jan. 2  | Stranded           | Off Domesnasa        | Total loss           |
| Bay Ridge            | Feb. 9  | Collision           | St. George S. I.   | Considerable               | Navarchos G. Sach-touris | Jan. 7  | Ashore             | Karabournou          | Floated              |
| Chinese Prince       | Jan. 2  | Fire                | Manchester         | Badly dam.                 | Nevisian                 | Jan. 7  | Collision          | Philadelphia         | Holed; flooded       |
| Carpati              | Jan. 2  | Disabled            | Pendeen            | Broken rud.                | Nettie                   | Feb. 9  | Lost               | Off Maine            | Floated; lk.         |
| Cornish              | Jan. 21 | Collision           | Portland           | Damaged                    | Newbigging               | Jan. 13 | Aground            | Kiel Canal           | Floated; lk.         |
| Chincha              | Jan. 26 | Disabled            | Guantanamo         | To rudder                  | Odmiral Watson           | Jan. 10 | Disabled           | Prince Rupert, B. C. | Lost prop.           |
| City of Canton       | Jan. 23 | Collision           | New Orleans        | To port side               | Oneida                   | Jan. 15 | Fire               | Boston               | Badly dam.           |
| Canadian Seigneur    | Jan. 5  | Struck pier         | Halifax            | To bows                    | Olympic                  | Jan. 7  | Disabled           | San Francisco        | To engines           |
| Christiana           | Jan. 7  | Collision           | Portinorwic        | Badly dam.                 | Olson                    | Jan. 29 | Hev. weather       | Balt                 | Hatches smashed      |
| Carna                | Jan. 7  | Disabled            | Charleston         | Boiler tubes leaking       | Olandese                 | Jan. 30 | Collision          | Marselles            | Serious              |
| Cape Race            | Jan. 29 | Disabled            | St. Michaels       | Leaking                    | Pennsylvania             | Jan. 14 | Hev. weather       | Havre                | Hev. dam.            |
| Commerical Trader    | Jan. 30 | Ashore              | Copenhagen         | Floated                    | President Garfield       | Jan. 15 | Disabled           | Red Hook             | Steer gr. dm.        |
| Cretan               | Feb. 3  | Ashore              | Seven Foot Knoll   | Floated                    | Persian                  | Jan. 27 | Disabled           | Tybee                | Lost wheel           |
| City of Eastbourne   | Jan. 14 | Collision           | Gravesend          | To port bow                | Port Augusta             | Jan. 31 | Hev. weather       | Del Breakwater       | To deck              |
| Cito                 | Jan. 12 | Collision           | Scheldt            | To stem, seriously damaged | Ronald M. Douglass       | Dec. 31 | Disabled           | Burin, N. F.         | Leaking              |
| Clan MacBrayne       | Jan. 12 | Disabled            | Malta              | To boiler tubes            | River Tawe               | Jan. 2  | Disabled           | Falmouth             | To steerer           |
| Camm                 | Jan. 13 | Disabled            | River Tay          | Lost 3 prop. blades        | Rytoner                  | Jan. 2  | Ashore             | Brightlingsea        | Floated              |
| Drogden              | Jan. 1  | Thru ice            | Copenhagen         | Leaking                    | Robin Adair              | Jan. 17 | Collision          | Boston               | Damaged              |
| Domingo de Larrinaga | Jan. 22 | Disabled            | Havana             | To mach.                   | Raita                    | Jan. 18 | Ashore             | Vancouver Island     | Total loss           |
| Delecto              | Feb. 4  | Disabled            | Diamond Shoals     | Lost prop.                 | Rollon                   | Jan. 23 | Collision          | New Orleans          | To bow               |
| Dawn                 | Feb. 7  | Struck pier         | Boston             | To stern                   | Ryder Hanify             | Jan. 27 | Collision          | Columbia River       | To bow               |
| Eveleen              | Jan. 6  | Str. subm. obj.     | Garston Channel    | To prop.                   | River Hudson             | Jan. 30 | Ashore             | Piraeus              | Floated              |
| Eelbeck              | Jan. 6  | Collision           | Barry              | To mach.                   | Rio Panuco               | Feb. 2  | Disabled           | Galveston            | To prop.             |
| Elbnixe              | Jan. 6  | Disabled            | Arendal            | Lost sails                 | Rodman Wanamaker         | Feb. 9  | Collided pier      | Brooklyn             | Considerable         |
| El Dia               | Jan. 7  | Collision           | North River        | Not stated                 | Rauha                    | Jan. 15 | Collision          | Millwall             | To bowsprit headgear |
| Eda                  | Jan. 9  | Aground             | Scheveningen       | Hvy. list to port          | Sucrosa                  | Jan. 13 | Disabled           | Jacksonville         | To tur. gear         |
| El Alba              | Jan. 28 | Collision           | New York           | Leaking                    | Steel Vendor             | Jan.    | Struck in river    | St. Lawrence River   | 33 plates damaged    |
| Eurana               | Jan. 29 | Disabled            | Boston             | Lost prop.                 | Speedway                 | Jan. 23 | Distress           | Tatoosh Island       | Total loss           |
| England Maru         | Jan. 30 | Disabled            | Off Cienfuegos     | To steering gear           | St. Patrick              | Jan. 25 | Disabled           | Off Virginia Capes   | Boiler trou.         |
| Essex Friar          | Feb. 12 | Disabled            | Carthage           | Floated                    | Spes                     | Jan. 5  | Struck bottom      | Fort Washington      | Leaking; plates dam. |
| Franklin K. Lane     | Jan. 14 | Aground             | Princess Bay       | Floated                    | Shenandoah               | Jan. 7  | Aground            | Baltimore            | Damaged              |
| Francisca            | Jan. 12 | Disabled            | Halifax            | Lost anchors and chains    | Steel Traveler           | Jan. 28 | Disabled           | Pulupandam           | Floated              |
| Falco                | Jan. 14 | Disa.; Hvy. Weather | London             | Broken rud.                | S-48                     | Jan. 29 | Ashore             | Portsmouth           | Floated              |
| Golden Sea           | Jan. 14 | Hev. weather        | Norfolk            | Leaking                    | S-19                     | Jan. 13 | Ashore             | Chatham, Mass.       | Considerable         |
| General Pau          | Jan. 12 | Disabled, tow.      | Halifax            | Rudder gone                | St. Stephen              | Feb. 4  | Fire               | Army Base            | To starboard         |
| Gael                 | Jan. 6  | Aground             | Callot Shad        | Floated                    | Scottsburg               | Feb. 9  | Collision          | Off Quarantine       | bow                  |
| Grace Dalzell        | Jan. 7  | Collision           | North River        | To bow                     | Test                     | Jan. 2  | Disabled           | Flamboro' Head       | To engine            |
| Glenbank             | Jan. 8  | Fire                | London             | Slight                     | Topila                   | Jan. 14 | Disabled           | Tampico              | Engine trouble       |
| Gobeo                | Jan. 28 | Fire                | Almeria            | Leaking                    | Therese O'Boyle          | Jan. 29 | Jammed in ice      | New York             | Sank                 |
| Grays Harbor         | Feb. 2  | Disabled            | Astoria            | Floated                    | Taubate                  | Feb. 2  | Ashore             | Rio Janeiro          | To prop.             |
| Gordon T. Tibbo      | Jan. 28 | Aground             | St. Pierre         | Floated                    | Tolna                    | Feb. 9  | Struck subm. obj.  | East River           | blades               |
| Herbert L. Rawling   | Jan. 23 | Disabled            | Turks Island       | Leaking                    | Uranienborg              | Jan. 14 | Hev. weather       | Port Talbot          | To lifeboats         |
| Hopesherswood        | Jan. 28 | Aground             | Pennacola          | Floated                    | Virgo                    | Jan. 1  | Ashore             | Gravesend            | Floated              |
| Harvester            | Jan. 26 | Wrecked             | Bimini             | Floated                    | Wm. Boyce Thompson       | Jan. 14 | Fire               | Brooklyn             | To cargo             |
| Helder               | Jan. 13 | Collision           | Glasgow            | Floated                    | Western Valleys          | Jan. 2  | Ashore             | Liverpool            | Mach. def.           |
| Impregnable          | Jan. 2  | Hev. weather        | Lowestoft          | Leaking                    | West Hobomac             | Jan. 26 | Fire               | New Orleans          | To deck              |
| Inocencio Figaredo   | Jan. 1  | Hev. weather        | Gijon              | To stern                   | West Hesseltime          | Jan. 27 | Disabled           | Bermuda              | Floated              |
| Ingerfire            | Jan. 19 | Disabled            | St. Johns, N. F.   | To main st. pipe           | Westlake                 | Jan. 27 | Hev. weather       | Not stated           | Floated              |
| John Ruger           | Jan. 17 | Fire                | Ogdensburg         | Badly dam.                 | West Saginaw             | Jan. 24 | Aground            | Pensacola            | Floated              |
| Jim                  | Feb. 10 | Ashore              | Stepping Stone     | Floated; leaking           | Yankton                  | Jan. 22 | Ashore             | Nix Mate             | Floated; leaking     |
| Jarlot               | Jan. 15 | Disabled            | Kenitra            | To prop.                   | Yayoi Maru               | Jan. 26 | Fire               | Dublin               | To cargo             |
| Kenowis              | Jan. 13 | Hev. weather        | New York           | To bow plates, rail, etc.  |                          |         |                    |                      |                      |
| Karina               | Jan. 12 | Ashore              | Point Aconi        | Total loss                 |                          |         |                    |                      |                      |
| Kittiwake            | Jan. 2  | Hev. weather        | Lowestoft          | Leaking                    |                          |         |                    |                      |                      |



# Private Ownership Advocated

American Steamship Owners Should Work Out Plan To End Government Operation—Country Will Support Such a Plan If Based on Facts

BY ALFRED GILBERT SMITH  
*President, American Steamship Owners Association*

THE past year has been filled with political cross currents in which were present grave anxieties and uncertainties as to what the future might hold for American business. Until after election and the country settled down to a feeling of confidence and assurance, there was no opportunity to bring out any plan or program in connection with the shipping problem. Any comprehensive pronouncement on the subject, such as the country has a right to expect from those who own and operate its ships and cry out for the retirement of the government from the business, would have fallen on uninterested ears, and received no consideration.

But the time has now come when the members of the American Steamship Owners association must take up the problem in a serious endeavor to work out a plan by which government operation can be brought to an early end. The association numbers among its members substantially all of the owners of American shipping who are active. The people of the United States have the right to expect from this association help in the solution of this problem. If we cannot solve it, who can? And if we cannot point the way out, what right have we to criticize the government for remaining in the business?

## Owners Must Point the Way

The fact is that if private ownership in foreign trade is to expand, or even to continue to exist, the members of this association must evolve a workable plan by which the retirement of the government can be accomplished at an early date. This plan must not only be conceived, but it must be worked out in all its details, and backed by facts and reasons to withstand the assaults which its critics and the advocates of government operation will direct against it, such a detailed plan must be completed before the convening of the next regular session of congress, or by the time a special session is called, if none is convened by the President.

This is not the task of your officers alone. Any successful plan will have to be the product of the minds and experience of all the members. To accomplish the desired end, therefore, it is the purpose of your officers and executive committee to recommend that a conference

of the members of the association be called at a convenient time in the near future, for the special purpose of considering and working out the problem of devising ways and means of retiring the government from the shipping business. Preparations will be made in advance so that the conference can immediately set itself to the task with as little waste of time as possible. Our members on the Pacific as well as on the Atlantic coast are going to be asked to give up their private affairs long enough to attend and lend their assistance



ALFRED GILBERT SMITH  
Mr. Smith was recently re-elected president of the American Steamship Owners association and his inaugural address is presented herewith

ance. In this way, and only in this way, can the association evolve a business proposal which will stand the test of sound business judgment and practicable application, and at the same time attain the position of influence which it deserves in American business circles.

A solution of this problem can be found. It may not be one that will please everybody, but whatever is found to be the basis for bringing about private ownership and operation of the government's fleet, the association must stand for it, and fight for it. There is every reason to believe that the country will back it so long as its plan is based on facts and not theory, and the facts

are made clear. One can safely prophesy that private ownership and operation will cost many millions of dollars less than the government is now spending on operations that are leading nowhere so far as permanence of American ships in foreign trade is concerned.

This is not the only task, however, which the association faces and must carry out, if it is to justify its continued existence, and to perform the services for its members which should properly be part of its functions. In my judgment, the scope of the association's operations should be broadened, to give it the place of leadership and influence it ought to have, considering the magnitude and importance of the business which it represents. The membership of the association includes 52 companies, with a total seagoing tonnage of 3,028,901 gross tons at hundreds of millions of capital.

## Influence Should Be Developed

For example, it should have representation in the chamber of commerce of the United States and in the international chamber of commerce. Can you think of English shipowners unrepresented in the councils of similar bodies? It ought to be able to wield a power and influence that would make its voice listened to by the senators and congressmen of the seaboard states. In matters pertaining to shipping, why should not these servants of the people give ear to a business that concerns in some way every man, woman and child? In a measure the association plays a part in all of these things, but not the part it should. Why not? I cannot say with certainty, but one of the plans which your officers have in contemplation, is to find out why, and to remedy it if that is possible.

It is my belief that the association should take a greater interest than it has in the relations between its members and the officers and men who man the ships. A closer, human interest ought to be built up, which should have for its object more concern in the welfare of the men. The result will be greater efficiency on the part of labor and profit to the employers. The success which some members have met with in their individual efforts along these lines may well serve as an example of what can be beneficially accomplished.



# From the Old Log Book

Stray Items About the Great Lakes, Atlantic, Pacific and Gulf Coasts and Inland Rivers from MARINE REVIEW Files of 10, 20, 30 and 40 Years Ago

March, 1885

THE MARINE engineer who boosts a manufacturer's appliance in lieu of certain considerations may still exist in this year, 1925, but it would be difficult to conceive of such bubbling refreshing frankness about it as shown by this correspondent of 40 years ago. He said in his letter, "I am so tangled up with business that I hardly know where to look or what to do. Yet I ought to be contended for I am making money fast. I have just put a patent firing machine on my boilers, and the man that owns it has made me a present of fifty dollars to say the patent is all right. It did very good work when we first put it on so I see no danger in indorsing it. \* \* \*"

We learn that the proposed canal treaty between the United States and Nicaragua was unanimously passed by the Nicaraguan senate. In view of the great volume and rapid growth of business through the Panama canal, the significance of this historic act may be greatly enhanced in the near future, when the question of a second canal from the Atlantic to the Pacific comes up for serious consideration.

The interesting fact was noted that Montauk Point light, Long Island, was erected in 1796, that it was built of granite, and that it stood on a bluff 60 feet above the beach, and that its light was visible 36 miles. Another curious circumstances, it was presented to the United States by France.

March, 1895

THE TWIN screw steamer CITY OF LOWELL, then the latest and the most notable addition to the fleet of Long Island sound palace steamers, was illustrated and very completely described. We learn that she was designed by A. Cary Smith of New York, to excel in power, speed, capacity and elegance any screw boat on the American coasts. She made the fastest trip ever made on Long Island sound, up to that time, going from New York to New London,

a distance of 122 statute miles, in five hours and 32 minutes, an average of 22.04 statute miles per hour. During a part of the run she reached 23.4 miles per hour.

\* \* \*

For anyone wanting more complete information about this interesting vessel we refer them to the March 7, 1895, issue of Marine Review.

\* \* \*

We find the important announcement that the ST. LOUIS, then nearing completion at Wm. Cramp & Sons S. & E. Co. and first of the American Line ships built in the country, was booked to leave on her maiden voyage from New York to Southampton on June 5, in command of Capt. William G. Randle, formerly commander of the PARIS.

What great hopes then, that this would prove to be the inauguration of an era of American-built and manned ships of the finest type in the trans-Atlantic service. But the momentum was lost and the ST. LOUIS and her sister ship, the ST. PAUL, served to continue alone to represent the American merchant marine in this trade until the war. Today we do not have a single first line passenger ship crossing the Atlantic, that was built in the United States.

\* \* \*

The official opening of the Kiel canal for June was noted with an interesting and complete description of the canal and its construction, and with passing mention of the strategic value, in case of war.

March, 1905

A SEA LEVEL canal through the Isthmus of Panama was recommended by the engineering committee of the Isthmian canal commission. The committee estimated that a sea level canal could be constructed in from 10 to 12 years from that time, and at an estimated cost of \$230,500,000. Nothing came of this, the canal was, of course, built with locks.

\* \* \*

It still remains an open question whether or not it would have been feasible to construct a sea level canal.

\* \* \*

The terrible destruction of life in the burning of the Long Island sound steamer

General Slocum, had an immediate and direct effect in greatly strengthening the rules and regulations and supervision of the U. S. steamboat inspection service. The revised rules and regulations where they differed from or were in addition to the existing rules were recorded in full.

\* \* \*

Disasters at sea are milestones on the long road leading to the adoption of efficient safeguards for the protection of life and property.

\* \* \*

Sir William White, the famous British naval constructor, discussed at some length the history of the development of the ships of the Cunard Line, leading up to the two new 25-knot turbine steamers then building. These two vessels were destined to become perhaps the two most noted merchant ships in all the history of the world, for they were the LUSITANIA and the MAURETANIA, the fastest ships ever built.

Financial assistance was given to the Cunard Line, a private company by the British government in the building of these superb ships. WHY? Because it was considered in the public interest. How about our own government doing something like this instead of wasting money on shipping board operation.

March, 1915

IN THESE dull times for shipbuilders it may or may not be pleasant to recall that in March, 1915, according to the MARINE REVIEW for that month the coast shipyards had a splendid construction program, and enough to keep them busy throughout the year. However, no one then seemed to realize that within three years the greatest shipbuilding program ever undertaken by any nation would be under way.

\* \* \*

The effect of the war in Europe had even at this time greatly stimulated the demand for ships.

\* \* \*

On the other hand shipbuilding on the Great Lakes was at that time at a lower ebb than it had been for years, not a single bulk freighter was under construction.



# Editorial

## Sell or Scrap the Government's Ships

**D**AY by day the waste in the operations of the United States shipping board and Emergency Fleet Corp. goes on. The people pay the bill while bureaucrats in Washington play at the operation of steamships. The department of commerce has just reported that less than 10 per cent of the privately owned steamships under the American flag are laid up at the present time, while over three-quarters of the government owned fleet is idle. This simple ratio tells the whole story. The government is able to operate only a small fraction of its fleet; nevertheless it is losing millions of dollars a year and probably will proceed to lose more now that some of the "experts" down in Washington are flirting with rate wars, proposing to withdraw from freight conferences which have proved absolutely indispensable to profitable ship operation all over the world.

### Making a Bluff at Selling

**S**TUNG by the almost universal criticism of its policies and with the hope of allaying public indignation over its tremendous and inexcusable losses, the shipping board is making a bluff at disposing of some of its few odd millions of obsolete tonnage. The entire fleet is being advertised for sale and Chairman O'Connor has explained that bids will be invited on the basis of unrestricted operation of vessels to be sold by the board or on the basis of guaranteed operation. Under the latter plan, it is stated, the purchaser enjoys a reduced price but in return must guarantee to maintain a specific service for the agreed term. These ships are being advertised for sale under the terms of the merchant marine act. The appearance of these advertisements, Chairman O'Connor has explained, will not indicate any change of policy by the shipping board. Of course not. A change in policy might result in selling some of these worthless hunks. It is far better from the political standpoint that they be kept, so as to furnish jobs for caretakers, inspectors, naval architects, engineers, refurbishers and the hoard of other gentry who are fattening on the government's merchant marine expenditures.

A special effort, it is understood, is going to be made to sell the Welland canal size steamers which were built during the war. A beneficent government is offering these hulks to American owners first. Everybody knows it is practically impossible to operate these boats profitably because their draft is too deep for the West Indian and other trades which require small boats and their coal consumption per ton of revenue cargo altogether too much for transoceanic work.

A great many of these lakers and a lot of other

vessels now on the books of the shipping board are simply junk. On another page is a letter from Senator Willis, expressing his regret over the possibility of the government being obliged to get rid of this fleet.

### Get Busy and Scrap the Junk

Any American citizen regrets that such a step is necessary, but the honorable senator, whose views on most business questions are sound, should realize that these ships were built to fit a war emergency and that the emergency is past. Many of these ships cost the government \$220 a ton. Today they aren't worth \$20. In fact, the government itself recently sold some for \$12.50 a ton. Now when a business firm faces a situation of this sort it does just one thing—*liquidates*. To liquidate means to sell for what you can get and start over again. Very few government officials understand what this means. Facing facts is not one of the virtues of politicians. No decisive action can be expected as long as our legislators are influenced by the blatant clamor of small groups of their constituents who with hopes of selfish individual gain, take a dog in the manger attitude toward the sale of these ships at whatever prices they will bring.

Most public men are successful in the conduct of their own affairs and if they used the same judgment in running the nation's business as they do their own they would stop this extravagant experiment. Even politically, government ownership has run its course and definite steps now to put a stop to it would be popularly received by a vast majority of all the people.

### Sell the Fleet—Get Out

**C**OMMISSIONER Plumber himself has stated that the expenses of operating the government merchant fleet could be reduced \$10,000,000 a year. It could be by private vessel owners and operators who could bring the full weight of competition to bear on their costs. But reduction of expenses is practically impossible in government departments. Senator Willis has indicated in his letter he would like to have a constructive suggestion. Here it is. Break up the hundreds of worthless government vessels and sell them for scrap. Sell the others under the hammer for what they will bring as quickly as possible. Abolish the Emergency Fleet Corp. Repeal those sections of the LaFollette act which prevent American operators from competing with foreign lines. Do the same with other merchant marine acts and the Panama canal act. Give protection to American shipbuilders and American shipowners just as all other American industries are protected. The net result would be as certain as the sunrise—prosperity for American shipping.



# Another Plan to Increase Costs

## Marine Engineers' Association Backs Bill to Enforce Eight Hour Day on American Ships—Two Sides to This Question

**A**N EFFORT is again being made to induce congress to pass a law compelling all American vessel owners to put enough men on their ships to give everyone an 8-hour day while at sea. The Marine Engineers Beneficial association has drafted a bill along these lines and hope to get it passed.

This subject is extremely important and as it is the purpose of MARINE REVIEW to maintain an open forum for the discussion of all points of view it is a pleasure to give space to a letter dealing with this question received from William S. Brown, national president of the Marine Engineers' Beneficial association, although we do not find ourselves in agreement with Mr. Brown's position or point of view. His letter follows:

"Inasmuch as we subscribe to your valuable marine journal we noted the item on page 67 of the February issue concerning the request which George Uhler made of the Lake Carriers association regarding wages many years ago. You say, 'We don't know what was done about this.'

"Well, we do know what was done with that request in 1901, and we know now that the 12-hour day for engineers prevails on lake ships, while the 8-hour day is observed on ocean and coastwise ships. Consequently, the wages per hour are less on the lakes than on the ocean. Look up your statistics, you are slipping. However, if you will publish the enclosed address of President Coolidge to the representatives of the fiftieth annual con-

vention of the Marine Engineers Beneficial association in your next issue, we will overlook your inadvertence."

The remarks of President Coolidge to which Mr. Brown refers were as follows:

"I congratulate you on this fiftieth anniversary of your organization. It gratifies me to hear of the excellent record you have made in those years for loyalty, skill, and devotion to the service you perform. Your past has been singularly free from differences among yourselves and with those with whom you must co-operate. Men who so conduct themselves show not only a genuine pride in their calling but a high quality of American citizenship.

"You have ever lived up to those traditions of the sea which you and other Americans have helped to create. It must give you satisfaction to feel what an essential role you play in maintaining your country's standing on the seven seas, and I know we can count on your continued loyalty as we work out the future of our shipping.

"I understand that your organization makes a special point of building up and spreading among your membership this pride of ship, pride of country, and pride of service. This is the mark of good Americanism. It will please the whole country to be assured once more that the important work always allotted to you is in the hands of men with your record for accomplishment."

The President's remarks were justified and it is too bad, in view of the good work which the Marine Engineers' Beneficial association has done that it should

also engage in political lobbying.

One of the few places where marine engineers can get good jobs easily at good pay is on the lakes under the jurisdiction of the Lake Carriers association and in a territory where the influence of the Beneficial association is at a minimum. Furthermore everyone familiar with the facts knows that conditions of employment on the Great Lakes are better than anywhere else in the world and that the pay is more generous, all owing to the fact that the Lake Carriers association has preserved the individual freedom of its members. Where else do men earn enough in eight or nine months work to live comfortably for a whole year, with three or four months vacation?

This publication cannot consistently hold any brief for the 8-hour day at sea or on the lakes. Conditions afloat and on shore are entirely different. A man on shipboard cannot get off and he might as well do something useful as loaf around in idleness. This opinion is based on actual direct contact with sea-going conditions. An 8-hour day on shipboard would simply forge one more shackle on the already nearly moribund American shipping industry. If a bill which the Marine Engineers' Beneficial association would like to have congress pass were ever enacted, there would be even less jobs for licensed marine engineers than at present.

## What's Doing Around Lake Michigan

**L**AKE MICHIGAN will have another port—Buffington—by the time navigation opens in 1926. It will be just west of Gary, Ind., and is being constructed and will be utilized entirely by the Universal Portland Cement Co., which is a subsidiary of the United States Steel Corp.

The Illinois quarries which have largely supplied the Universal company with limestone are playing out, and the new source will be the Michigan Limestone & Chemical Co., Calcite, Mich. Accordingly, a harbor is to be dredged out, about a quarter of a mile from the Universal plant at Buffington, to accommodate the self-unloaders comprising the Great Lakes stone fleet.

A 2000-foot pile pier is to be projected into Lake Michigan, and at the outer end will be constructed, at an angle to it, a rubble mound 1200 feet long. Behind this protection will be constructed an

1800-foot concrete pier. The pier will be so laid out that a fill between it and shore will provide huge storage space. Between the pier and the breakwater the harbor will be dredged to 23 feet below datum.

With limestone brought in by self-unloaders, dock equipment at the outset will be limited to a bridge for carrying cargoes back on the storage space. Later coal may be brought from Lake Erie ports in the bottoms of the Pittsburgh Steamship Co., also a Steel corporation subsidiary. There is some talk, too, of eventually shipping cement out by water. Receipt of coal would require unloading machinery. Contracts are now being let for the work.

**T**HE COWAN of the Standard Oil Co. fleet probably will be the first bulk freighter to ply Lake Michigan this spring. She is scheduled to begin

taking gasoline and kerosene from the Standard Oil refinery at Whiting to Muskegon, Mich., about March 20. The RENOWN and the rest of the Standard Oil fleet probably will not leave their dock in the Indiana Harbor ship canal until the middle of April. Electric engine room to bridge signals are being installed on the COWAN and the RENOWN. The latter ship was docked at South Chicago at the close of navigation last year. No changes are contemplated in the personnel of the fleet, Julius Lang continuing as master of the COWAN, Leonard Thomson of the RENOWN, W. R. Leith of the barge, H. H. Hansen of the tug OUTAGAMIE and Floyd Banks as dock superintendent.

**B**LAST furnace interests in the Chicago district are running much shorter on their iron ore supply than they like to, and consequently they are hoping



for an early opening of navigation this spring. There are 39 blast furnaces drawing their ore supply through Gary, South Chicago and Indiana Harbor. On Dec. 1 only 25 were active, compared with 38 at this time. At Gary the Illinois Steel Co. will have about a month's supply on its docks May 1, but with a dock a half mile long and three bins, even 500,000 tons of ore looks thin. The Federal and Iroquois furnaces will take in ore at a good rate as soon as the season opens. No shutdowns from lack of ore are in sight but the low stockpiles run up the cost of handling.

**F**AVORABLE weather and ice conditions but only a fair business has been the experience of the Goodrich Transit Co., which maintains winter schedules between Chicago and Michigan

and Wisconsin points. Low water at Holland, Mich., compelled the abandonment of the tri-weekly service between Chicago and Holland, Benton Harbor and St. Joseph. Daily service has been maintained between Chicago and Milwaukee, semi-weekly between Chicago and Sheboygan and Manitowoc, and tri-weekly between Chicago and Grand Haven and Muskegon.

Appointments of masters and engineers for the 1925 season for the Goodrich line, which now includes the former Graham & Morton steamers, will be made shortly. Some changes in engineers are in prospect, owing to resignations, but all masters will bring out their last season's commands. The Graham & Horton fleet, which formerly has been all white, will come out this year in the regular Goodrich colors—black with red

and black funnel and white upper works.

The CITY OF GRAND RAPIDS, a Graham & Morton steamer formerly on the run from Chicago to Michigan City and Holland, will take the Muskegon and Grand Haven run with the ALABAMA. The INDIANA, which the CITY OF GRAND RAPIDS supplants, will take week-end runs out of Chicago and make northern points during the week.

**T**WIN bills are being introduced in the legislatures of Illinois and Indiana to create the Interstate Port Authority of Illinois and Indiana. This port authority, consisting of three representatives of each state, would govern the development of Wolf lake, in the Calumet district at the Illinois-Indiana line. Federal engineers have estimated that for a small sum the lake could be dredged.

## Ocean Freight Rates

Per 100 Pounds Unless Otherwise Stated

Quotations Corrected to Feb. 18, 1925 on Future Loadings

NOTE: FREIGHT RATES STEADY WITH SLIGHT CHANGE FOR GRAIN

| New York to              | Grain           | Provisions      | Cotton (H. D.) | Flour         | General cargo cu. ft. | 100 lbs.       | Finished steel | REMARKS Freight Offered | From North Pacific Ports to          | Lumber Per m. ft. |
|--------------------------|-----------------|-----------------|----------------|---------------|-----------------------|----------------|----------------|-------------------------|--------------------------------------|-------------------|
| Liverpool....            | 2s 6d†          | \$0.50          | \$0.30 to 0.45 | \$0.21        | \$0.40                | \$0.75         | \$7.00T        | Fair                    | San Francisco.....                   | \$5.00            |
| London.....              | 2s 6d†          | 0.50            | 0.45           | 0.21          | 0.40                  | 0.75           | 7.00T          | Fair                    | South California.....                | 5.00 to 6.00      |
| Oso.....                 | \$0.18          | 0.45            | 0.40           | 0.27          | 0.42½                 | 0.85           | 7.00T          | Fair                    | Hawaiian Islands.....                | 10.00 to 12.00    |
| Copenhagen..             | 0.18            | 0.45            | 0.40           | 0.26          | 0.42½                 | 0.85           | 7.00T          | Poor                    | New Zealand.....                     | 17.00 to 20.00    |
| Hamburg....              | 0.12            | 0.35            | 0.38½          | 0.22          | 0.37½                 | 0.75           | 8.00T          | Poor                    | Sydney.....                          | 13.00 to 15.00    |
| Bremen.....              | 0.12            | 0.35            | 0.45           | 0.22          | 0.37½                 | 0.75           | 8.00T          | Poor                    | Melbourne-Adelaide...                | 14.00 to 16.00    |
| Rotterdam and Amsterdam. | 0.13            | 0.32½           | 0.40           | 0.22          | 0.35                  | 0.70           | 7.50T          | Fair                    | Oriental Ports.....                  | 11.00 to 12.50    |
| Antwerp....              | 0.10            | 0.32½           | 0.35           | 0.22          | 0.35                  | 0.70           | 7.00T          | Poor                    | Oriental Ports (logs)....            | 10.00 to 11.00    |
| Havre.....               | 0.16            | 0.50            | 0.35           | 0.27½         | 0.40                  | 0.75           | 8.00T          | Poor                    | Peru-Chile.....                      | 12.00 to 14.00    |
| Bordeaux....             | 0.16            | 0.50            | 0.35           | 0.27½         | 0.40                  | 0.75           | 8.00T          | Poor                    | South Africa.....                    | 17.00 to 18.00    |
| Barcelona....            | 0.20 to 0.25    | 12.00T          | 0.30           | 10.00T        | —12.00T—              | —              | 10.00T         | Good                    | Cuba.....                            | 14.00 to 16.00    |
| Lisbon.....              | 0.20            | 0.65            | 0.40           | 7.00T         | —20.00T—              | —              | 7.00T          | Fair                    | United Kingdom.....                  | 80s to 90s        |
| Marseilles...            | 0.16            | 0.55            | 0.30           | 6.00          | —20.00T—              | —              | 5.00T          | Slow                    | United Kingdom (ties)..              | 70s to 80s        |
| Genoa.....               | 18.50           | 12.50           | 0.40           | 8.25          | —20.00T—              | —              | 10.00T         | Fair                    | Baltimore-Boston range.              | \$14.00 to 15.00  |
| Naples.....              | 18.50           | 12.50           | 0.40           | 8.25          | —20.00T—              | —              | 10.00T         | Fair                    | Baltimore-Boston range. (ties).....  | Not quoted        |
| Constantinople           | 0.27            | 17.00T          | 0.75           | 0.32½         | —20.00T—              | —              | 9.00T          | Fair                    | Buenos Aires.....                    | 14.00             |
| Alexandria...            | None            | 17.00T          | 0.75           | 0.32½         | —20.00T—              | —              | 9.00T          | Fair                    |                                      |                   |
| Algiers.....             | 0.22            | 0.75            | 0.75           | 0.40          | —20.00T—              | —              | 7.00T          | Very Slow               | U. K. and Continent (gross ton)..... | 35s to 40s        |
| Dakar.....               |                 | 14.50T          |                | 12.00T        | —20.00T—              | —              | 10.00T         | Fair                    |                                      |                   |
| Capetown....             | 8.00T           | 12.00T          |                | 10.00T        | —12.00T—              | —              | 9.00T          | Very Good               |                                      |                   |
| Buenos Aires.            |                 | 18.00 to 20.00T |                |               | 18.00 to 20.00T†      | 8.00 to 8.80T  |                | Slow                    |                                      |                   |
| Rio de Janeiro           |                 | 19.00 to 21.00T |                | 7.00 to 7.70T | 19.00 to 21.00T†      | 7.00 to 7.70T† |                | Fair                    |                                      |                   |
| Pernambuco..             |                 | 22.00T          |                | 9.00T         | —22.00T—†             | 9.70T†         |                | Fair                    |                                      |                   |
| Havana.....              | 0.22½ to 0.27½* | 0.42½*          |                | 0.22½*        | 0.54*                 | 1.08*          | 0.20*          | Fair                    |                                      |                   |
| Vera Cruz....            | 0.25            | 0.40            | 0.45           | 0.25          | 0.52½                 | 1.05           | 0.30 to 0.35   | Fair                    |                                      |                   |
| Valparaiso...            |                 | 1.07            |                | 0.70          | 0.45                  | 0.80           | 10.00T         | Fair                    |                                      |                   |
| San Francisco.           |                 | 0.40 to 0.70    |                | 0.50 to 1.10  |                       | 2.50           | 0.55 to 1.00   | Good                    |                                      |                   |
| Sydney.....              |                 | 18.00T          | 2.50           | 18.00T        | 18.00-24.00T          | 9.00-12.00T    |                | Good                    |                                      |                   |
| Calcutta.....            |                 | 16.00T          | 0.60           | 12.00T        | —16.00T—              | 10.00T         |                | Good                    |                                      |                   |

T—Ton. †Per quarter of 480 lbs. ‡Landed. ††Heavy products limited in length. \*Extra charge for wharfage. \*\*Plus \$1.00 surcharge on all rates to Rio de Janeiro on account of congestion.

### Principal Rates To and From United Kingdom

|   |        |   |
|---|--------|---|
| Grain, River Plate to United Kingdom.....                 | 24     | 6 |
| Coal, South Wales to Near East.....                       | 10     | 0 |
| Coal, United Kingdom to Buenos Aires....                  | 14     | 0 |
| Manganese Ore, Poti to Philadelphia.....                  | \$3.30 |   |
| Pig iron, United Kingdom to New York or Philadelphia..... | 15     | 0 |
| Iron ore, Bilbao to Glasgow.....                          | 7      | 0 |
| Iron ore, Huelva to Phila. or Balto....                   | 11     | 0 |

### Bunker Prices

| At New York            |                               |                                 |            | At Philadelphia             |                               |                                 |            | Other Ports                               |        |
|------------------------|-------------------------------|---------------------------------|------------|-----------------------------|-------------------------------|---------------------------------|------------|---|--------|
| Coal alongside per ton | Fuel oil alongside per barrel | Diesel oil alongside per gallon |            | Coal trim. in bunk. per ton | Fuel oil alongside per barrel | Diesel oil alongside per gallon |            |   |        |
| Jan. 9, 1924..         | \$5.25@6.50                   | \$1.41½                         | 4.63@5.42c | Jan. 9, 1924..              | \$5.50@6.30                   | \$1.415                         | 3.86c      | Boston coal, per ton                      | \$6.75 |
| April 8.....           | 4.50@6.50                     | 1.66½                           | 5.51c      | April 8.....                | 4.85@5.85                     | 1.955                           | 5.41@5.65c | Boston oil, f. a. s., per barrel.....     | \$1.69 |
| July 21.....           | 4.50@6.25                     | 1.81½                           | 5.16@5.65c | July 21.....                | 4.85@6.00                     | 1.945                           | 5.40       | Hampton Roads, coal, per ton f.o.b., .... | 4.60   |
| Dec. 22.....           | 5.25@6.05                     | 1.86½                           | 5.15@5.50c | Dec. 22.....                | 5.25@5.80                     | 1.865                           | 5.15c      | Cardiff, coal, per ton. 16s 3d            |        |
| Jan. 20.....           | 5.25@6.05                     | 1.86½                           | 5.50c      | Jan. 20.....                | 5.25@5.80                     | 2.06                            | 5.41@5.65  | London, coal per ton 22s 6d               |        |
| Feb. 18, 1925..        | 5.25@6.05                     | 1.86½                           | 5.50c      | Feb. 18, 1925..             | 5.25@5.80                     | 2.10@2.25                       | 5.9@6.9    | Antwerp, coal, per ton 24s 0d             |        |



# Marine Business Statistics Condensed

## Record of Traffic at Principal American Ports for Past Year

### New York

| Month           | (Exclusive of Domestic) |             | (Clearances—) |             |
|-----------------|-------------------------|-------------|---------------|-------------|
|                 | No. ships               | Net tonnage | No. ships     | Net tonnage |
| January, 1925.. | 387                     | 1,556,853   | 457           | 1,869,323   |
| December .....  | 423                     | 1,673,567   | 470           | 1,822,485   |
| November .....  | 392                     | 1,709,329   | 456           | 1,921,088   |
| October .....   | 459                     | 1,915,122   | 540           | 2,332,411   |
| September ..... | 476                     | 2,072,324   | 483           | 2,026,172   |
| August .....    | 406                     | 1,650,694   | 479           | 2,018,621   |
| July .....      | 491                     | 1,937,802   | 525           | 2,081,663   |
| June .....      | 465                     | 1,882,471   | 495           | 2,014,598   |
| May .....       | 466                     | 1,811,769   | 520           | 2,046,833   |
| April .....     | 469                     | 1,814,848   | 504           | 1,958,579   |
| March .....     | 418                     | 1,517,503   | 459           | 1,694,905   |
| February .....  | 378                     | 1,467,340   | 445           | 1,738,675   |
| January, 1924.. | 370                     | 1,513,056   | 434           | 1,749,172   |

### Philadelphia

| (Including Chester, Wilmington and the whole Philadelphia port district) |              |             |               |             |
|--|--------------|-------------|---------------|-------------|
| (Exclusive of Domestic)  |              |             |               |             |
| Month  | (Entrances—) |             | (Clearances—) |             |
|  | No. ships    | Net tonnage | No. ships     | Net tonnage |
| January, 1925..  | 77           | 224,574     | 57            | 180,331     |
| December .....   | 71           | 179,994     | 61            | 188,667     |
| November .....   | 85           | 220,852     | 59            | 174,470     |
| October .....  | 75           | 171,465     | 52            | 137,653     |
| September .....  | 82           | 192,900     | 66            | 161,925     |
| August .....   | 86           | 192,777     | 57            | 138,280     |
| July .....   | 90           | 195,704     | 63            | 149,736     |
| June .....   | 94           | 214,439     | 75            | 179,939     |
| May .....  | 99           | 219,934     | 76            | 216,237     |
| April .....  | 82           | 195,774     | 82            | 232,501     |
| March .....  | 80           | 203,260     | 66            | 190,240     |
| February .....   | 86           | 224,309     | 64            | 186,373     |
| January, 1924..  | 60           | 151,915     | 53            | 155,550     |

### Boston

| (Exclusive of Domestic) |              |             |               |             |
|-------------------------|--------------|-------------|---------------|-------------|
| Month                   | (Entrances—) |             | (Clearances—) |             |
|                         | No. ships    | Net tonnage | No. ships     | Net tonnage |
| January, 1925..         | 78           | 205,327     | 34            | 80,480      |
| December .....          | 100          | 278,347     | 52            | 125,332     |
| November .....          | 97           | 310,423     | 55            | 149,777     |
| October .....           | 128          | 327,931     | 82            | 179,963     |
| September .....         | 113          | 308,352     | 75            | 183,286     |
| August .....            | 120          | 293,661     | 91            | 176,563     |
| July .....              | 139          | 351,477     | 99            | 193,747     |
| June .....              | 147          | 283,982     | 110           | 200,026     |
| May .....               | 122          | 260,300     | 100           | 219,216     |
| April .....             | 100          | 282,324     | 63            | 165,557     |
| March .....             | 89           | 262,438     | 50            | 132,863     |
| February .....          | 99           | 307,627     | 44            | 133,504     |
| January, 1924..         | 84           | 250,335     | 47            | 116,832     |

### Portland, Me.

| (Exclusive of Domestic) |              |             |               |             |
|-------------------------|--------------|-------------|---------------|-------------|
| Month                   | (Entrances—) |             | (Clearances—) |             |
|                         | No. ships    | Net tonnage | No. ships     | Net tonnage |
| January, 1925..         | 23           | 65,910      | 23            | 65,218      |
| December .....          | 30           | 86,088      | 29            | 78,076      |
| November .....          | 15           | 26,281      | 12            | 19,616      |
| October .....           | 11           | 12,506      | 15            | 24,551      |
| September .....         | 19           | 42,910      | 16            | 34,813      |
| August .....            | 24           | 52,400      | 25            | 54,739      |
| July .....              | 18           | 43,926      | 22            | 49,365      |
| June .....              | 20           | 34,631      | 19            | 31,911      |
| May .....               | 19           | 33,970      | 21            | 40,832      |
| April .....             | 17           | 75,406      | 21            | 91,045      |
| March .....             | 23           | 79,648      | 22            | 72,517      |
| February .....          | 20           | 67,476      | 22            | 69,594      |
| January, 1924..         | 22           | 56,749      | 23            | 59,235      |

### Providence

| (Exclusive of Domestic) |              |             |               |             |
|-------------------------|--------------|-------------|---------------|-------------|
| Month                   | (Entrances—) |             | (Clearances—) |             |
|                         | No. ships    | Net tonnage | No. ships     | Net tonnage |
| January, 1925..         | 12           | 38,395      | 11            | 39,717      |
| December .....          | 9            | 36,259      | 11            | 40,624      |
| November .....          | 11           | 45,232      | 8             | 37,967      |
| October .....           | 6            | 16,071      | 8             | 14,522      |
| September .....         | 7            | 20,038      | 5             | 21,937      |
| August .....            | 7            | 21,863      | 5             | 18,916      |
| July .....              | 8            | 27,747      | 7             | 28,730      |
| June .....              | 5            | 21,873      | 4             | 10,456      |
| May .....               | 10           | 23,795      | 4             | 17,931      |
| April .....             | 9            | 30,592      | 6             | 18,959      |
| March .....             | 7            | 33,895      | 6             | 23,517      |
| February .....          | 10           | 39,388      | 8             | 35,236      |
| January, 1924..         | 8            | 33,215      | 7             | 28,927      |

### Baltimore

| (Exclusive of Domestic) |              |             |               |             |
|-------------------------|--------------|-------------|---------------|-------------|
| Month                   | (Entrances—) |             | (Clearances—) |             |
|                         | No. ships    | Net tonnage | No. ships     | Net tonnage |
| January, 1925..         | 90           | 282,299     | 79            | 250,369     |
| December .....          | 105          | 326,907     | 99            | 291,043     |
| November .....          | 105          | 325,934     | 97            | 305,601     |
| October .....           | 101          | 297,822     | 118           | 355,500     |
| September .....         | 94           | 282,861     | 100           | 289,324     |
| August .....            | 90           | 278,346     | 105           | 329,470     |
| July .....              | 106          | 318,585     | 106           | 318,182     |
| June .....              | 117          | 339,212     | 104           | 298,765     |
| May .....               | 122          | 369,797     | 126           | 378,501     |
| April .....             | 112          | 329,900     | 106           | 510,159     |
| March .....             | 98           | 297,869     | 110           | 331,665     |
| February .....          | 98           | 310,158     | 107           | 335,108     |
| January, 1924..         | 85           | 270,169     | 99            | 315,804     |

### Norfolk and Newport News

| (Exclusive of Domestic) |              |             |               |             |
|-------------------------|--------------|-------------|---------------|-------------|
| Month                   | (Entrances—) |             | (Clearances—) |             |
|                         | No. ships    | Net tonnage | No. ships     | Net tonnage |
| January, 1925..         | 39           | 95,259      | 88            | 262,371     |
| December .....          | 41           | 108,930     | 73            | 274,576     |
| November .....          | 31           | 89,647      | 70            | 205,671     |
| October .....           | 39           | 95,375      | 71            | 227,247     |
| September .....         | 30           | 83,640      | 80            | 251,466     |
| August .....            | 27           | 80,338      | 94            | 281,959     |
| July .....              | 30           | 78,138      | 102           | 301,920     |
| June .....              | 36           | 105,301     | 83            | 235,667     |
| May .....               | 27           | 73,846      | 94            | 269,752     |
| April .....             | 27           | 82,382      | 83            | 234,550     |
| March .....             | 19           | 55,501      | 81            | 243,065     |
| February .....          | 36           | 105,233     | 90            | 259,085     |
| January, 1924..         | 31           | 96,074      | 79            | 249,575     |

### Savannah

| (Exclusive of Domestic) |              |             |               |             |
|-------------------------|--------------|-------------|---------------|-------------|
| Month                   | (Entrances—) |             | (Clearances—) |             |
|                         | No. ships    | Net tonnage | No. ships     | Net tonnage |
| November, 1924..        | 36           | 109,623     | 39            | 115,168     |
| October .....           | 35           | 101,689     | 31            | 93,380      |
| September .....         | 34           | 94,422      | 36            | 100,903     |
| August .....            | 25           | 71,138      | 25            | 68,527      |
| July .....              | 23           | 56,548      | 25            | 64,981      |
| June .....              | 29           | 77,096      | 25            | 66,483      |
| May .....               | 36           | 94,106      | 35            | 92,503      |
| April .....             | 23           | 63,518      | 25            | 67,087      |
| March .....             | 31           | 82,928      | 34            | 90,122      |
| February .....          | 26           | 84,961      | 30            | 89,599      |
| January .....           | 28           | 88,627      | 32            | 96,979      |
| December, 1923..        | 26           | 72,541      | 21            | 64,973      |
| November .....          | 24           | 75,739      | 23            | 67,551      |

### Key West

| (Exclusive of Domestic) |              |             |               |             |
|-------------------------|--------------|-------------|---------------|-------------|
| Month                   | (Entrances—) |             | (Clearances—) |             |
|                         | No. ships    | Net tonnage | No. ships     | Net tonnage |
| January, 1925..         | 75           | 100,350     | 71            | 96,815      |
| December .....          | 77           | 90,316      | 72            | 83,706      |
| November .....          | 90           | 101,387     | 84            | 102,408     |
| October .....           | 75           | 92,284      | 72            | 89,364      |
| September .....         | 84           | 103,588     | 83            | 98,063      |
| August .....            | 81           | 93,805      | 82            | 94,682      |
| July .....              | 94           | 110,228     | 91            | 106,127     |
| June .....              | 54           | 65,770      | 58            | 71,102      |
| May .....               | 98           | 110,675     | 95            | 104,661     |
| April .....             | 92           | 95,435      | 85            | 90,677      |
| March .....             | 103          | 112,577     | 89            | 97,276      |
| February .....          | 83           | 83,118      | 78            | 84,678      |
| January, 1924..         | 69           | 79,224      | 70            | 82,775      |

### Mobile

| (Exclusive of Domestic) |              |             |               |             |
|-------------------------|--------------|-------------|---------------|-------------|
| Month                   | (Entrances—) |             | (Clearances—) |             |
|                         | No. ships    | Net tonnage | No. ships     | Net tonnage |
| January, 1925..         | 84           | 192,722     | 82            | 184,575     |
| December .....          | 84           | 165,352     | 80            | 165,325     |
| November .....          | 80           | 169,400     | 73            | 156,327     |
| October .....           | 80           | 176,416     | 71            | 160,717     |
| September .....         | 75           | 145,597     | 73            | 147,681     |
| August .....            | 77           | 161,386     | 81            | 166,218     |
| July .....              | 90           | 196,589     | 73            | 164,783     |
| June .....              | 74           | 146,668     | 80            | 157,655     |
| May .....               | 80           | 158,109     | 70            | 133,920     |
| April .....             | 83           | 178,637     | 84            | 182,491     |
| March .....             | 79           | 168,182     | 86            | 174,517     |
| February .....          | 81           | 158,416     | 83            | 159,081     |
| January, 1924..         |              |             |               |             |

### New Orleans

| (Exclusive of Domestic) |              |             |               |             |
|-------------------------|--------------|-------------|---------------|-------------|
| Month                   | (Entrances—) |             | (Clearances—) |             |
|                         | No. ships    | Net tonnage | No. ships     | Net tonnage |
| January, 1925..         | 253          | 731,964     | 264           | 738,164     |
| December .....          | 277          | 776,064     | 257           | 735,100     |
| November .....          | 247          | 713,667     | 250           | 735,984     |
| October .....           | 267          | 757,738     | 279           | 768,630     |
| September .....         | 248          | 677,631     | 237           | 640,301     |
| August .....            | 247          | 645,151     | 252           | 676,881     |
| July .....              | 241          | 650,671     | 250           | 687,005     |
| June .....              | 240          | 622,326     | 223           | 588,554     |
| May .....               | 260          | 703,950     | 264           | 696,397     |
| April .....             | 249          | 646,315     | 262           | 653,740     |
| March .....             | 225          | 542,040     | 222           | 538,642     |
| February .....          | 217          | 604,411     | 227           | 610,455     |
| January, 1924..         | 217          | 595,087     | 220           | 588,703     |

### Houston

| (Cargo tonnage)  |              |             |               |             |
|------------------|--------------|-------------|---------------|-------------|
| Month            | (Entrances—) |             | (Clearances—) |             |
|                  | No. ships    | Net tonnage | No. ships     | Net tonnage |
| December, 1924.. | 99           | 39,568      | 102           | 154,455     |
| November .....   | 101          | 36,016      | 95            | 233,436     |
| October .....    |              | 34,945      |               | 192,986     |
| September .....  | 94           | 50,710      | 90            | 171,229     |
| August .....     | 82           | 66,665      | 84            | 114,966     |
| July .....       | 59           | 77,062      | 57            | 288,417     |
| June .....       | 65           | 74,794      | 72            | 336,312     |
| May .....        | 72           | 64,937      | 71            | 362,350     |
| April .....      | 78           | 76,466      | 73            | 337,757     |
| March .....      | 88           | 113,064     | 87            | 411,715     |
| February .....   | 62           | 82,601      | 65            | 228,178     |
| January .....    | 60           | 55,037      | 58            | 267,066     |
| December, 1923.. | 74           | 73,876      | 70            | 304,359     |

### Galveston

| (Exclusive of Domestic) |              |             |               |             |
|-------------------------|--------------|-------------|---------------|-------------|
| Month                   | (Entrances—) |             | (Clearances—) |             |
|                         | No. ships    | Net tonnage | No. ships     | Net tonnage |
| December, 1924..        | 63           | 190,311     | 107           | 341,705     |
| November .....          | 100          | 342,472     | 126           | 408,277     |
| October .....           | 77           | 238,918     | 120           | 386,412     |
| September .....         | 65           | 189,293     | 112           | 350,173     |
| August .....            | 61           | 177,941     | 87            | 268,774     |
| July .....              | 52           | 147,279     | 58            | 172,847     |
| June .....              | 41           | 133,079     | 55            | 170,181     |
| May .....               | 58           | 148,758     | 69            | 200,846     |
| April .....             | 54           | 154,343     | 67            | 196,610     |
| March .....             | 57           | 176,379     | 88            | 287,398     |
| February .....          | 55           | 152,950     | 80            | 236,761     |
| January .....           | 70           | 210,110     | 96            | 317,105     |
| December, 1923..        | 71           | 219,767     | 106           | 313,231     |

### Los Angeles

| (Exclusive of Domestic) |             |             |              |             |
|-------------------------|-------------|-------------|--------------|-------------|
| Month                   | —Entrances— |             | —Clearances— |             |
|                         | No. ships   | Net tonnage | No. ships    | Net tonnage |
| December, 1924.         | 153         | 343,151     | 118          | 276,302     |
| November .....          | 195         | 310,425     | 121          | 223,778     |
| October .....           | 156         | 290,697     | 184          | 285,871     |
| September .....         | 128         | 333,989     | 136          | 277,479     |
| August .....            | 96          | 301,744     | 76           | 239,441     |
| July .....              | 96          | 337,767     | 74           | 275,993     |
| June .....              | 102         | 307,659     | 67           | 258,827     |
| May .....               | 91          | 290,863     | 75           | 246,104     |
| April .....             | 100         | 281,343     | 72           | 251,237     |
| March .....             | 117         | 272,831     | 95           | 232,805     |
| February .....          | 135         | 315,365     | 102          | 237,379     |
| January .....           | 107         | 246,203     | 124          | 241,858     |
| December, 1923.         | 165         | 285,919     | 103          | 261,322     |



# Marine Business Statistics Condensed

## Port Traffic Record

### Portland, Oreg.

(Exclusive of Domestic)

| Month           | Entrances |             | Clearances |             |
|-----------------|-----------|-------------|------------|-------------|
|                 | No. ships | Net tonnage | No. ships  | Net tonnage |
| December, 1924. | 17        | 64,756      | 29         | 115,186     |
| November .....  | 27        | 105,529     | 36         | 137,696     |
| October .....   | 24        | 92,077      | 43         | 159,017     |
| September ..... | 26        | 97,923      | 36         | 128,205     |
| August .....    | 22        | 78,722      | 31         | 118,526     |
| July .....      | 11        | 45,451      | 22         | 84,195      |
| June .....      | 20        | 72,801      | 29         | 104,309     |
| May .....       | 16        | 58,889      | 21         | 72,663      |
| April .....     | 26        | 90,286      | 33         | 115,504     |
| March .....     | 27        | 103,891     | 32         | 118,406     |
| February .....  | 23        | 85,301      | 35         | 130,528     |
| January .....   | 12        | 47,848      | 25         | 97,674      |
| December, 1923. | 30        | 99,748      | 34         | 120,487     |

### Seattle

(Exclusive of Domestic)

| Month            | Entrances |             | Clearances |             |
|------------------|-----------|-------------|------------|-------------|
|                  | No. ships | Net tonnage | No. ships  | Net tonnage |
| January, 1925... | 39        | 169,458     | 36         | 145,663     |
| December .....   | 36        | 164,991     | 45         | 181,849     |
| November .....   | 40        | 203,891     | 45         | 194,766     |
| October .....    | 45        | 175,725     | 48         | 198,037     |
| September .....  | 48        | 193,049     | 41         | 168,594     |
| August .....     | 35        | 149,904     | 41         | 179,108     |
| July .....       | 35        | 156,626     | 47         | 197,330     |
| June .....       | 50        | 211,828     | 45         | 175,319     |
| May .....        | 46        | 188,853     | 43         | 177,581     |
| April .....      | 46        | 196,591     | 53         | 220,763     |
| March .....      | 57        | 236,620     | 45         | 191,152     |
| February .....   | 48        | 189,146     | 54         | 213,851     |
| January, 1924 .. | 57        | 233,002     | 60         | 242,577     |

### Port Arthur

(Exclusive of Domestic)

| Month            | Entrances |             | Clearances |             |
|------------------|-----------|-------------|------------|-------------|
|                  | No. ships | Net tonnage | No. ships  | Net tonnage |
| January, 1925 .. | 34        | 100,449     | 33         | 85,261      |
| December .....   | 34        | 101,609     | 41         | 122,869     |
| November .....   | 32        | 107,737     | 32         | 90,726      |
| October .....    | 47        | 144,763     | 54         | 159,034     |
| September .....  | 42        | 120,636     | 38         | 105,700     |
| August .....     | 42        | 116,626     | 32         | 89,698      |
| July .....       | 47        | 130,595     | 47         | 115,750     |
| June .....       | 54        | 146,819     | 43         | 131,654     |
| May .....        | 50        | 143,452     | 40         | 105,296     |
| April .....      | 46        | 105,294     | 49         | 121,408     |
| March .....      | 48        | 134,343     | 49         | 140,682     |
| February .....   | 46        | 130,269     | 45         | 116,511     |
| January, 1924 .. | 40        | 132,585     | 43         | 139,346     |

## Isherwood System

THOUGH the year 1924 has not been good for the shipbuilding industry, the amount of new tonnage added during this period, constructed on the Isherwood system is about three times as great as that built under this system in 1923. At the end of 1924 a total of 1472 ships of a deadweight carrying capacity of 12,408,700 of the worlds fleet of merchant ships had been built on the Isherwood system.

Of the interesting contracts employing Isherwood framing, were nine large oil tankers for the Standard Oil Co., of New Jersey building in Germany. The Southern Pacific Co. adopted this system for the large new cargo vessel which they are building at the Federal Shipbuilding Co., Kearney, N. J. Several British ships also used this system.

## Record of Traffic Through Panama Canal

|           |          | Atlantic to Pacific traffic |             |               | Pacific to Atlantic traffic |             |               | Total traffic through canal |             |               |
|-----------|----------|-----------------------------|-------------|---------------|-----------------------------|-------------|---------------|-----------------------------|-------------|---------------|
|           |          | No. of ships                | Net tonnage | Tons of cargo | No. of ships                | Net tonnage | Tons of cargo | No. of ships                | Net tonnage | Tons of cargo |
| 1924      |          |                             |             |               |                             |             |               |                             |             |               |
| December  | American | 92                          | 483,689     | 308,610       | 106                         | 567,009     | 957,358       | 198                         | 1,050,698   | 1,265,968     |
|           | Foreign  | 101                         | 465,449     | 345,222       | 108                         | 473,049     | 654,497       | 209                         | 938,498     | 999,709       |
|           | Totals   | 193                         | 949,138     | 653,832       | 214                         | 1,040,058   | 1,611,855     | 407                         | 1,989,196   | 2,265,687     |
| November  | American | 94                          | 525,989     | 284,850       | 81                          | 429,037     | 687,581       | 175                         | 995,026     | 972,431       |
|           | Foreign  | 104                         | 459,388     | 325,310       | 105                         | 458,117     | 663,852       | 209                         | 917,505     | 989,162       |
|           | Totals   | 198                         | 985,377     | 610,160       | 186                         | 887,154     | 1,351,433     | 384                         | 1,872,531   | 1,961,593     |
| October   | American | 91                          | 499,269     | 243,004       | 100                         | 517,428     | 813,773       | 191                         | 1,016,697   | 1,056,777     |
|           | Foreign  | 107                         | 478,460     | 355,401       | 95                          | 428,793     | 605,802       | 202                         | 907,253     | 961,203       |
|           | Totals   | 198                         | 977,729     | 598,405       | 195                         | 946,221     | 1,419,575     | 393                         | 1,923,950   | 2,017,980     |
| September | American | 101                         | 538,461     | 217,845       | 104                         | 577,306     | 969,667       | 205                         | 1,115,767   | 1,187,512     |
|           | Foreign  | 92                          | 451,676     | 346,610       | 98                          | 408,770     | 578,142       | 190                         | 860,446     | 924,752       |
|           | Totals   | 193                         | 990,137     | 564,455       | 202                         | 986,076     | 1,547,809     | 395                         | 1,976,213   | 2,112,264     |
| August    | American | 102                         | 575,780     | 241,567       | 94                          | 504,003     | 829,934       | 196                         | 1,079,783   | 1,071,507     |
|           | Foreign  | 89                          | 408,637     | 290,136       | 87                          | 413,475     | 596,842       | 176                         | 822,112     | 886,978       |
|           | Total    | 191                         | 984,417     | 531,703       | 181                         | 917,478     | 1,426,776     | 372                         | 1,901,985   | 1,958,479     |
| July      | American | 114                         | 603,339     | 297,625       | 114                         | 588,560     | 897,949       | 228                         | 1,191,899   | 1,195,574     |
|           | Foreign  | 104                         | 460,039     | 355,339       | 90                          | 384,159     | 546,241       | 194                         | 844,198     | 901,580       |
|           | Totals   | 218                         | 1,063,378   | 652,964       | 204                         | 972,719     | 1,444,190     | 422                         | 2,036,097   | 2,097,154     |
| June      | American | 103                         | 546,903     | 250,651       | 104                         | 559,615     | 908,343       | 207                         | 1,106,518   | 1,158,994     |
|           | Foreign  | 90                          | 434,266     | 346,111       | 80                          | 387,255     | 517,745       | 170                         | 821,521     | 863,856       |
|           | Totals   | 193                         | 981,169     | 596,762       | 184                         | 946,870     | 1,426,088     | 377                         | 1,928,039   | 2,022,850     |
| May       | American | 108                         | 580,686     | 318,891       | 112                         | 586,971     | 1,015,608     | 220                         | 1,167,657   | 1,334,499     |
|           | Foreign  | 101                         | 470,938     | 393,453       | 96                          | 447,075     | 626,034       | 197                         | 918,013     | 1,019,487     |
|           | Totals   | 209                         | 1,051,624   | 712,344       | 208                         | 1,034,046   | 1,641,642     | 417                         | 2,085,670   | 2,353,986     |
| April     | American | 116                         | 644,601     | 313,744       | 116                         | 609,241     | 982,701       | 232                         | 1,253,842   | 1,296,445     |
|           | Foreign  | 86                          | 391,997     | 321,285       | 85                          | 407,332     | 540,991       | 171                         | 799,329     | 862,276       |
|           | Totals   | 202                         | 1,036,598   | 635,029       | 201                         | 1,016,573   | 1,523,692     | 403                         | 2,053,171   | 2,158,721     |
| March     | American | 118                         | 622,730     | 328,370       | 117                         | 628,038     | 1,044,524     | 235                         | 1,250,768   | 1,372,894     |
|           | Foreign  | 94                          | 432,942     | 295,178       | 100                         | 452,369     | 604,400       | 194                         | 883,311     | 899,578       |
|           | Totals   | 212                         | 1,055,672   | 623,548       | 217                         | 1,080,407   | 1,648,924     | 429                         | 2,136,079   | 2,272,472     |
| February  | American | 105                         | 564,637     | 314,419       | 115                         | 633,608     | 1,036,697     | 220                         | 1,198,245   | 1,351,116     |
|           | Foreign  | 114                         | 535,277     | 365,396       | 84                          | 375,357     | 527,104       | 198                         | 910,634     | 892,500       |
|           | Totals   | 219                         | 1,099,914   | 679,815       | 199                         | 1,008,965   | 1,563,801     | 418                         | 2,108,879   | 2,243,616     |
| January   | American | 132                         | 718,017     | 335,654       | 120                         | 645,770     | 1,066,254     | 252                         | 1,363,787   | 1,401,908     |
|           | Foreign  | 121                         | 555,220     | 346,658       | 103                         | 481,033     | 678,766       | 224                         | 1,036,253   | 1,025,424     |
|           | Totals   | 253                         | 1,273,237   | 682,312       | 223                         | 1,126,803   | 1,745,020     | 476                         | 2,400,040   | 2,427,332     |

### Vessels in Ballast

|           |          |     |         |   |    |        |   |     |         |   |
|-----------|----------|-----|---------|---|----|--------|---|-----|---------|---|
| 1924      |          |     |         |   |    |        |   |     |         |   |
| December  | American | 30  | 169,035 | 0 | 2  | 3,925  | 0 | 32  | 172,960 | 0 |
|           | Foreign  | 15  | 62,867  | 0 | 5  | 14,884 | 0 | 20  | 77,751  | 0 |
|           | Totals   | 45  | 231,902 | 0 | 7  | 18,809 | 0 | 52  | 250,711 | 0 |
| November  | American | 35  | 221,439 | 0 | 2  | 7,988  | 0 | 37  | 221,616 | 0 |
|           | Foreign  | 26  | 93,815  | 0 | 4  | 7,988  | 0 | 30  | 101,803 | 0 |
|           | Totals   | 61  | 315,254 | 0 | 6  | 8,165  | 0 | 67  | 323,419 | 0 |
| October   | American | 37  | 231,183 | 0 | 2  | 4,905  | 0 | 39  | 236,088 | 0 |
|           | Foreign  | 23  | 79,902  | 0 | 6  | 10,009 | 0 | 29  | 89,911  | 0 |
|           | Totals   | 60  | 311,085 | 0 | 8  | 14,914 | 0 | 68  | 325,999 | 0 |
| September | American | 47  | 271,374 | 0 | 1  | 4,107  | 0 | 48  | 275,481 | 0 |
|           | Foreign  | 17  | 94,556  | 0 | 3  | 8,954  | 0 | 20  | 103,510 | 0 |
|           | Totals   | 64  | 365,930 | 0 | 4  | 13,061 | 0 | 68  | 378,991 | 0 |
| August    | American | 47  | 295,753 | 0 | 0  | 0      | 0 | 47  | 295,753 | 0 |
|           | Foreign  | 17  | 75,811  | 0 | 0  | 0      | 0 | 17  | 75,811  | 0 |
|           | Totals   | 64  | 371,564 | 0 | 0  | 0      | 0 | 64  | 371,564 | 0 |
| July      | American | 51  | 297,489 | 0 | 5  | 6,747  | 0 | 56  | 304,236 | 0 |
|           | Foreign  | 21  | 99,346  | 0 | 5  | 5,084  | 0 | 26  | 104,430 | 0 |
|           | Totals   | 72  | 396,835 | 0 | 10 | 11,831 | 0 | 82  | 408,666 | 0 |
| June      | American | 48  | 179,161 | 0 | 0  | 0      | 0 | 48  | 279,161 | 0 |
|           | Foreign  | 15  | 81,465  | 0 | 2  | 5,072  | 0 | 17  | 85,537  | 0 |
|           | Totals   | 63  | 260,626 | 0 | 2  | 5,072  | 0 | 65  | 365,698 | 0 |
| May       | American | 48  | 277,628 | 0 | 1  | 209    | 0 | 49  | 277,837 | 0 |
|           | Foreign  | 13  | 71,134  | 0 | 3  | 4,635  | 0 | 16  | 75,679  | 0 |
|           | Totals   | 61  | 348,762 | 0 | 4  | 4,844  | 0 | 65  | 353,516 | 0 |
| April     | American | 57  | 340,185 | 0 | 2  | 5,473  | 0 | 59  | 345,658 | 0 |
|           | Foreign  | 16  | 65,372  | 0 | 4  | 9,735  | 0 | 20  | 75,107  | 0 |
|           | Totals   | 73  | 405,557 | 0 | 6  | 15,208 | 0 | 79  | 420,765 | 0 |
| March     | American | 59  | 341,151 | 0 | 0  | 0      | 0 | 59  | 341,151 | 0 |
|           | Foreign  | 22  | 109,162 | 0 | 3  | 9,295  | 0 | 25  | 118,457 | 0 |
|           | Totals   | 81  | 450,313 | 0 | 3  | 9,295  | 0 | 84  | 459,608 | 0 |
| February  | American | 47  | 281,805 | 0 | 0  | 0      | 0 | 47  | 281,805 | 0 |
|           | Foreign  | 37  | 138,050 | 0 | 4  | 19,117 | 0 | 41  | 157,167 | 0 |
|           | Totals   | 84  | 419,855 | 0 | 4  | 19,117 | 0 | 88  | 438,972 | 0 |
| January   | American | 66  | 396,712 | 0 | 0  | 0      | 0 | 66  | 396,712 | 0 |
|           | Foreign  | 45  | 191,380 | 0 | 2  | 9,269  | 0 | 47  | 200,649 | 0 |
|           | Totals   | 111 | 588,092 | 0 | 2  | 9,269  | 0 | 113 | 597,361 | 0 |



## Recent Sales of Ships

The Maine Coast & Canada Steamship Co. has bought the steamer VAN to relieve the MASSASOIT on the Boston-Maine Coast run, while the MASSASOIT undergoes repairs.

Sale of the Matson freight steamer HYADES to Frank B. Peterson, president of the Red Salmon Canning Co., for the firm's Alaska business has been announced by the Matson Navigation Co. The HYADES will make regular trips from San Francisco, taking up cannery supplies and employes to the north and returning in August with the pack and the cannery workers. The HYADES carries 5500 tons of cargo and will replace several sailing ships. The Matson Line has laid up the ship for the last year and a half. For many years she was operated in the Matson Line's San Francisco-Hawaiian Island service.

President Palmer of the Emergency Fleet Corp. has announced the following sales of vessel tonnage:

**EASTERN GALE**, steel cargo, 6631 deadweight tons, 4669 gross tons, for \$145,000 to the Booth Fisheries Co., Chicago.

**LARK HARMINIA**, lake-type cargo, 4230 deadweight tons, 2686 gross tons, for \$33,500, to the E. I. du Pont de Nemours & Co., Wilmington, Del. This is the first sale made under the recently adopted revised schedule for lake-type vessels, namely basic price of \$50,000 less estimated cost of repairs.

**M. J. SCANLON**, steel cargo, 8597 deadweight tons, 5602 gross tons, for \$97,500, to the Hammond Lumber Co., San Francisco.

**BETTERTON**, steel tanker, 10,254 deadweight tons, 7866 gross tons, for \$300,000, to Frank W. Seth, New York. The sale was made for a cash consideration and with the obligation on the part of the purchaser to substitute a reciprocating engine for the present turbine equipment.

**SAN PANQUAL**, concrete tonker, 7500 deadweight tons, 6486 gross tons, for \$16,000 cash to the Old Time Molasses Co., Havana, Cuba.

**MOOSITAUKA**, steel ocean going tug, coal burning, 429 gross tons, for \$46,000 cash to the Matson Navigation Co., San Francisco.

The steamer AUGUSTA, formerly in the New York-Boston freight service of the Coastal Steamship Corp., has been sold in New York to Capt. J. P. McAllister for \$8000 at public auction.

**BURNWELL**, cylindrical tanker, 8981 deadweight tons, 5771 gross tons, for \$61,000 to the Alpha Steamship Corp., New York.

## To Sell Lakers?

Spurred to further action by revelations of inefficiency, the shipping board has announced plans for selling its lake-built vessels. Whether they will really be sold remains to be seen. Instead of offering these ships to all comers for anything they will bring, a reserve of price of \$50,000 has been fixed, which will probably interfere with negotiations in a good many cases.

The board has approximately 325 lake built vessels, divided into three general classes, namely, 64 coal-burning single-deck ships of from 2875 to 3300 deadweight tons each, ranging in draft

from 17 feet, 9¼ inches to 19 feet 1 inch; next, 86 coal-burning single-deck vessels of about 3500 deadweight tons each, loaded draft 21 feet; and last, 162 of from 4050 to 4361 deadweight tons each, 110 of the latter being oil burners and all of this group having beams on which 'tween decks can be laid, some of them having such decks.

The board will offer any of these types for sale to American buyers at a price of \$50,000 each, less the sum estimated by the board to be necessary for reconditioning for service, so that a ship requiring repairs estimated at \$13,000 would be available for purchase at \$37,000.

Recently the New York Central railroad opened bids for the construction of a steel tow boat and ten steel gasoline-engine driven hoisting barges. There were nine bidders on the towboat, whose quotations ranged from \$98,750 and six months to \$139,500 and 5½ months. There were 10 bidders for the steel hoisting barges whose proposals were based on three different propositions. The contract for these barges was awarded to the Atlantic Works, East Boston, Mass., and for the tow boat to the Newport News Shipbuilding & Drydock Co., Newport News, Va. The details of the various bids are as follows:

### Bids for One Steel Tow Boat for the New York Central Railroad Co.

| Bidder                         | Price    | Time monthly |
|--------------------------------|----------|--------------|
| Newport News Shipbuilding Co.  | \$98,750 | 6            |
| Atlantic Works                 | 99,500   | 8            |
| Todd Shipyards, Inc.           | 112,500  | 11           |
| Bethlehem Shipbuilding Corp.   | 115,800  | 9            |
| Staten Island Shipbuilding Co. | 118,900  | ..           |
| Federal Shipbuilding Co.       | 116,500  | 7            |
| Sun Shipbuilding Co.           | 139,500  | 5½           |
| Fletcher D. D. Co.             | No bid   |              |
| Cramps' Shipyard               | 135,000  | 9            |

### Bids for Ten Steel Gasoline Hoisting Barges for New York Central Railroad

| Bidder  | Proposal A | Proposal B | Proposal C |
|---|------------|------------|------------|
| New York S. B. Co.  | \$248,000  | \$258,200  | \$243,100  |
| Alternate (Isherwood System)  | 205,125    | 214,500    | 199,555    |
| Delivery 2 barges in 4½ months and 1 every 10 days (alternate bid, 2 in 4 months, 2 every 10 days.) |            |            |            |
| Sun S. B. Co.   | 283,150    | 297,890    | 283,050    |
| Three barges in 4 months and seven in five months and 10 in 6 months.                               |            |            |            |
| Staten Island S. B. Co. could not submit price on Ellis System but bases on Isherwood construction. |            |            |            |
| Without machinery, 10 barges  | 255,250    | .....      | .....      |
| Machinery extra, each   | 6,335      | 7,260      | 6,300      |
| Newport News S. B. Co., each  | 21,200     | 22,600     | 20,600     |
| Delivery 4 in 4 months and one per month thereafter.  |            |            |            |
| Federal S. B. Co., each   | 32,000     | 33,000     | 31,000     |
| Alternate (Isherwood), each   | 27,500     | 28,000     | 27,000     |

Delivery one in 3½ months and two per month.

Atlantic Works .... 199,780 209,280 194,390  
Three in 10 weeks, three in 18 weeks, four in 28 weeks.

Maryland D. D. Co., each ..... 32,700 33,600 32,000  
One in 5½ months and one each month thereafter.

Bethlehem S. B. Co., each ..... 27,620 28,160 27,440

Alternate using Lidgetterwood Machinery, each ..... 27,820 28,985 27,540  
One in 4½ months and one every two weeks thereafter.

Union S. B. Co., each 54,384 55,510 53,704  
Five in 6 months and second five in 9 months.

Cramps S. B. Co. 370,000 371,000 362,000  
Delivery approximately 5 months.

**THE** Great Lakes Engineering Works of Detroit recently received an order for a six hundred-foot freighter from the Columbia Steamship Co. This makes the second steamer of this type for the same company for 1925 delivery.

The new steamer will be 618 feet overall, 592 feet on the keel, 62 feet beam and 32 feet deep. The motive power will be a triple expansion engine of cylinders 24, 41 and 68 inches, with a 42-inch stroke. She will be equipped with water tube boilers of Babcock & Wilcox make. The Frantz and the new steamer will take the place of three older steamers which were sold by the Columbia Steamship Co. to A. E. R. Schneider a year ago. The capacity of the fleet will be increased by this addition.

When the S. S. MOHAWK of the Clyde Line became a total loss by burning at sea it was, of course, expected that as soon as the formal arrangements could be attended to, that the Clyde Line needing the services of this ship, would immediately place an order to duplicate it. Such an order has now been given to the Newport News Shipbuilding & Drydock Co., Newport News, Va. The new MOHAWK which is to be built, will of course, be an improvement on the old in every respect.

Pusey & Jones, Wilmington, Del., recently received an order for a ferry boat from the Chesapeake Ferry Co., Norfolk, Va.

It is reported that the Gulf Refining Co. is in the market for a tanker.

The Bath Iron Works, Bath, Me., is building a new passenger steamer for the Martha's Vineyard and Nantucket service to replace the SANKATY, destroyed by fire last June.

The Coney Island Co., Cincinnati, has awarded a contract for an all-steel wharfboat to the Midland Barge Co. Midland, Pa. The new craft will cost \$60,000 and will consist of 18 sections.